The Journal of The SOUTH CAROLINA *Medical Association*

VOLUME LII — MAY, 1956 — NUMBER 5

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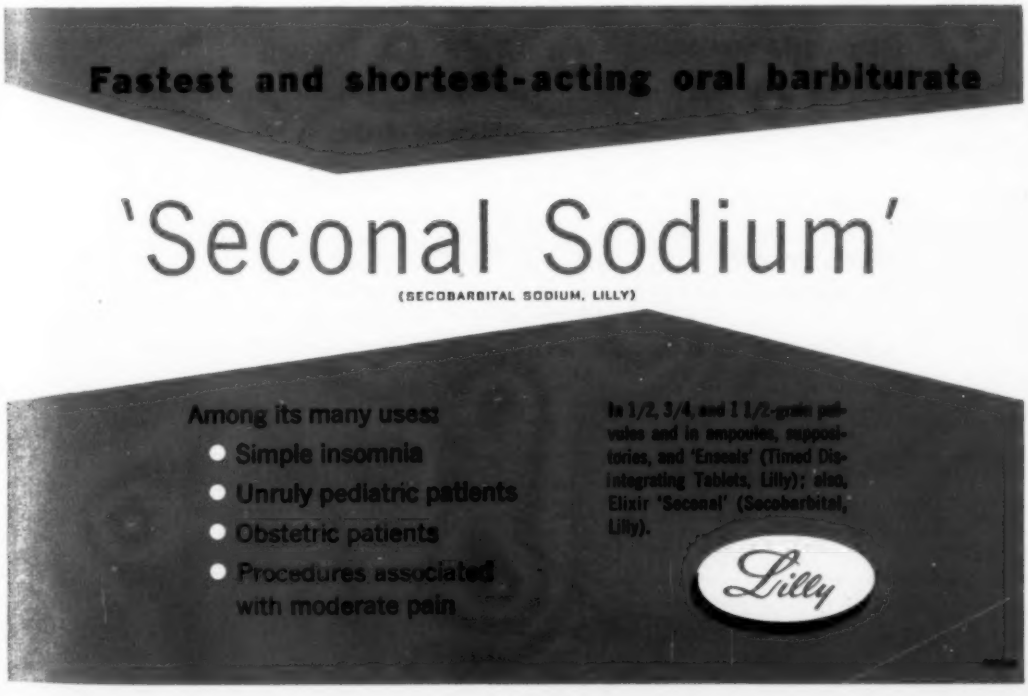

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INJURIES OF THE CERVICAL SPINAL CORD AND THEIR MANAGEMENT

JOHN D. ASHMORE, JR., M. D.* AND LUTHER C. MARTIN, M. D.**
Charleston, S. C.

Nearly all of the injuries of the spinal column which are associated with cervical cord injury are produced by sudden, severe flexion or extension of the spine. The vertebrae may be dislocated or, more commonly, there may be a fracture-dislocation. In addition to the involvement of the vertebral body, there may be fracture of one or both articular processes with displacement of one vertebra upon the next. There may also be fractures of the laminae, spinous or transverse processes. An important fact emerges from the study of cervical cord injury in that there is no constant quantitative relationship between the extent of injury to the bones of the spinal column and the extent of the injury to the spinal cord.

In reviewing cases of severe trauma, one finds four different pathological factors acting alone or in various combinations. These factors are (1) laceration and crushing of nervous tissue at the time of original trauma; (2) hemorrhage into the cord; (3) edema of the cord; (4) continuing pressure upon the cord caused by residual bony deformity, ruptured intervertebral disc, or meningeal hemorrhage.

In the consideration of cervical cord injuries, one injury deserves special consideration because of pronounced differences in anatomy at this level of the vertebral column. This injury is the dislocation of the atlas or first cervical vertebra on the axis or second cervical vertebra. The anatomy at this level is distinguished by the presence of the odontoid process, the transverse ligament, and the unusual degree of mobility at the articular facets. These are three types of injury most often associated with trauma at this level; (1) fracture through the base of the odontoid process without dislocation, (2) dislocation of the atlas on the axis with rupture of the transverse ligament but without fracture of the odontoid, (3) anterior or posterior dislocation of the atlas on the axis with fracture of the odontoid. This is the commonest type of dislocation.

The first essential step in the management of cervical cord injuries is their recognition. Any patient unconscious from a head injury should automatically be suspected of having a cervical spine injury. A spinal injury may be indicated by the posture of the patient, by pain, stiffness, tenderness, or deformity of the spine, and by weakness, paralysis, or sensory changes affecting the extremities or trunk. If the patient is conscious he usually complains either of (1) pain in the neck which may radiate into the shoulder or arms, or (2) either weakness or numbness or both in one or more extremities.

If injury of the cervical spine is suspected, the patient's head must not be lifted for any purpose. The patient should be moved with the greatest care. A minor injury may be greatly aggravated by improper movement. The doctor should supervise any movement and transportation of the patient if possible. The patient should not be lifted from the ground unless he is on a stretcher or some

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rigid support. Movement should not be attempted unless absolutely necessary. The optimum position is the supine, with a folded blanket or sheets beneath the shoulders and the neck in slight hyperextension. Folded blankets or sandbags should be placed at both sides of the head to prevent lateral movement. The patient should not lie prone. Three persons are needed to properly turn a patient with a fracture dislocation of his neck. One should grasp the chin and occiput and exert steady traction in the line of the long axis of the body. The second should grasp the ankles and exert equal counter-traction. The third should kneel beside the patient and gently rotate the patient toward himself while the traction is being exerted.

All patients with fracture-dislocation of the cervical spine should be transferred immediately to a hospital where definitive neurosurgical treatment can be given.

When the patient arrives at the hospital, the first diagnostic step is an evaluation of his general physical condition, especially the degree of surgical shock. If shock is present, its treatment should receive precedence over any other care. Shock is treated in the usual manner by the application of warm blankets, use of the "shock position," the administration of appropriate fluids, preferably blood, and perhaps stimulants. As soon as possible, a complete examination of the patient should be carried out. The vital signs should be recorded immediately and frequently thereafter. In performing the neurological examination, the sensory level may be marked directly on the skin of the patient, especially if the patient is to be transferred to another hospital. The degree of motor loss should be recorded in as much detail as possible.

Acute wounds of the chest, head, or abdomen should be treated before the spinal injury. However, care should be exercised during these treatments to prevent any distortion of the spine.

Stiffness of the neck with displacement of the head forward or with tilting or rotation to one side usually indicates fracture or fracture dislocation of one or more cervical vertebrae. The site of the injury can often be determined by sliding the hand beneath the patient's neck without moving the head or neck, to find the point of maximum tenderness or faulty alignment of the cervical spine.

When the physical and neurological examinations have been completed, it is important to obtain good x-ray studies of the cervical spine. If possible, the patient should be attended personally by the responsible physician. One should not depend upon an x-ray technician to position the head and neck of a patient with possible cervical injury. In addition to the usual antero-posterior and lateral views of the cervical spine, special views to show the odontoid process are usually indicated. X-rays should include the entire cervical spine if possible. Downward traction on the arms while the film is being taken aids in the demonstration of the lower cervical vertebrae.

The next step in the evaluation of cervical spine injuries is usually a lumbar puncture. This test is of particular importance in determining the presence of a subarachnoid block. The Queckenstedt test is carried out in the usual manner. Light, brief bilateral jugular compression normally results in a quick rise of 10 mm. or more with rapid return to initial pressure. Firm bilateral jugular compression for 10 seconds results normally in a sharp rise of spinal fluid pressure with return to the original resting level within 20 seconds after release of compression.

After the above studies have been performed, the decision as to surgical treatment must be made. The decision as to whether a laminectomy should be done should be made as soon as possible. If surgical decompression is to be carried out, operation should be performed immediately. The decision to operate is usually made when there is a demonstrable block of the subarachnoid space by Queckenstedt test, if there is x-ray evidence of bony encroachment upon the spinal canal, or if there is evidence of progression in the cord signs. Recently the syndrome of acute anterior spinal cord compression has been added to the indications for laminectomy.[1] This syndrome consists of total motor loss below the level of the injury with loss of pain and temperature sensation, but with touch, position and vibra-

tory sensation intact. This syndrome is produced by compression of the anterior part of the spinal cord by an extruded disc or bone fragment. The attachment of the dentate ligaments causes the maximum stress to be applied to the lateral columns of the spinal cord.

There is a group of patients who have a questionable block and questionable x-ray evidence of encroachment upon the spinal canal, and it is unknown how much permanent neurological damage has been done. These cases test the judgment of the neurological surgeon. However, we feel that with these patients it is probably better to err on the side of a possibly unnecessary operation. It is impossible to tell by clinical examination alone that a completely irreparable lesion is present. Thus, patients should not be denied any opportunity for improvement from the relief of pressure of any type on the spinal cord.

Skeletal traction, usually in the form of Crutchfield tongs, is usually applied to the patient before and during laminectomy. In some cases in which there is no evidence of subarachnoid space block or bony encroachment, the use of this skeletal traction alone may be all that is indicated. This skeletal traction is certainly preferable to the halter type traction. The halters usually become extremely uncomfortable and interfere with the movement of the jaw in eating and talking. Furthermore, considerably less traction can be applied by the use of the halter. If the fracture dislocation is to be reduced by skeletal traction, enough weight should be applied to reduce the dislocation as soon as possible. We do not believe in the slow application of weight with reduction of the fracture over a period of several days. Usually 30 to 75 pounds of weight is applied and frequent x-rays of the cervical spine are taken until the dislocation is reduced. The amount of weight is then reduced to about 20 pounds. The patient is then maintained in traction for a period of about 6 weeks or until x-rays reveal callus formation.

In addition to the immediate treatment of the spinal lesion, the chief consideration in the treatment of a paralyzed patient is careful attention from the very beginning to the bladder and bowel care, prevention of decubitus, maintenance of adequate fluid intake, and nourishment, early rehabilitation, and preservation of morale.

The bladder care is one of the most important problems in paraplegia. Overdistention should be avoided at all times as well as long continued contraction of the bladder. The patient should be catheterized within a few hours after his injury in order to prevent overdistention of the bladder. An indwelling urethral catheter is usually inserted. Tidal drainage of the bladder is the method of choice for bladder care. However, frequent irrigations of the bladder with antiseptic solutions may be used if tidal drainage is not available. The catheter should be changed at least every two weeks. An attempt should be made to establish an automatic bladder as soon as the period of spinal shock has disappeared and cystometrograms indicate a return of bladder tone. The return of bladder function may sometimes be speeded by the use of drugs such as Prostigmin, pilocarpin, or Trasentine. At times surgical methods are necessary for treatment of the atonic and hypertonic bladder, such as transurethral resection of the bladder neck or presacral neurectomy.

The immobilization of the patient often results in absorption of calcium from the skeleton. High serum calcium may result in the formation of stones in the urinary tract. The frequency of calculus formation is great enough to warrant x-ray examination of the abdomen (flat plates) at monthly intervals. Calculus should be suspected when fever recurs. The urine should be kept acid as a prophylaxis against calculi.

Care of the skin is another important item in the care of the paralyzed patient. To prevent the onset of decubitus ulcers it is necessary to change the position of the patient at least every two hours day and night, and to avoid wet, soiled, or crumpled sheets. Skin care is facilitated by the use of special air mattresses or the Stryker frame upon which the patient can be turned frequently. The skin should be kept dry with powder, and treated with frequent alcohol rubs and, if possible, daily applica-

tions of infra-red or ultraviolet light. Applications of tincture of benzoin at pressure areas help to protect the skin.

The better the general physical condition of the patient, the less likely he is to develop decubitus ulceration. These patients are thus given a high caloric, high protein and high vitamin diet. The hemoglobin and red count and blood protein level should be maintained at normal values. Supplementary feedings with protein preparations, the administration of plasma, iron, or frequent small transfusions help restore debilitated, anemic patients.

If decubitus develops, the area should be cleaned and ointment or antibiotics applied. Devitalized tissue should be removed and the ulcerated area should be closed when the wound is clean.

Respiratory complications are particularly frequent in cervical cord injuries, due to a lack of full expansion of the lungs when the intercostal muscles are paralyzed. Aids in the treatment of respiratory complications are intratracheal aspiration of mucous, tracheotomy if necessary, and fixation of the paralyzed abdominal muscles by a binder to improve the action of the diaphragm. CO_2 inhalations are sometimes of help in increasing the respiratory depth. Chemotherapy is always indicated in the presence of potential or actual pulmonary infection.

Abdominal distention secondary to paralytic ileus is a frequent complication of spinal injuries. This distention may be controlled by drugs such as Prostigmin, supplemented by enemas. An indwelling stomach tube with gastric suction may be necessary to relieve the distention.

Bowel training should be started as soon as possible and the patient should be given an enema at a regular time each day until automatic control is established. Fecal impaction should be watched for and treated as necessary. Fluid intake of at least 4,000 ml. per day is necessary to aid in proper excretion of urine and feces.

Psychic trauma is great in individuals with neurological damage. Thus, the morale of these paralyzed patients is of extreme importance. Each case requires individual consideration, but as a general rule several tenets of treatment may be set forth: never give false hope during the waiting period of 6 to 8 weeks while waiting for return of function. Narcotics are rarely indicated since pain is seldom a problem and addiction only augments the patient's handicap. Physical and occupational therapy are of vital importance, both from a physical standpoint and the improvement of the patient's sense of well being.

Rehabilitation should be started as early as possible. The muscles which are functioning should be exercised frequently. By developing these muscles the patient may better preserve his health and metabolism and may begin to walk more quickly with the aid of crutches and braces.

Hope of at least some recovery of function should not be given up for at least two years after injury. It has been said that the paralegic's biggest asset is always hope.

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WILLIAM STEWART HALSTED

By Edward F. Parker, M. D.*
Charleston, S. C.

Dr. Halsted was Professor of Surgery in the Johns Hopkins University and Surgeon-in-Chief of the Johns Hopkins University Hospital from the date of its opening in 1889 until his death on September 7, 1922, lacking only sixteen days of reaching the age of seventy years.

His distinct published contributions included:

1. Blood refusion (transfusion) by centripetal arterial transfusion in carbonic oxide poisoning.
2. The effects of adduction and abduction on the length of the limb in fractures of the femur.
3. The employment of fine silk in preference to catgut and the advantages of transfixing tissues and vessels in controlling hemorrhage.
4. The introduction of rubber gloves, gutta-percha tissue, silver foil, mattress intestinal suture and the subcuticular stitch.
5. Special emphasis of the blood clot and the management of dead spaces in the treatment of wounds which had led to its more widespread use and appreciation.
6. The open air treatment of Surgical tuberculosis.
7. The introduction of conduction (so-called "block") anesthesia.
8. Circular and lateral intestinal anastomoses.
9. The bulkhead method of end-to-end intestinal suture.
10. The blind end circular suture of the large intestine, the closed ends abutted and the double diaphragm punctured with a knife past the rectum.
11. Original operations for the cure of inguinal hernia.
12. Original operations for cancer of the breast.
13. Original operation for goitre.
14. Original operation for aseptic intestinal anastomosis.
15. The partial, progressive and complete occlusion of the aorta and other large arteries by metal bands in the cure of aneurysm.
16. The relation of dilatation of the subclavian artery to the cervical rib.
17. The successful ligation of the left subclavian in its first portion for the cure of a huge subclavian aneurysm.
18. The transplantation of the parathyroids.
19. The retrojection of bile in the pancreas as a cause of acute hemorrhagic pancreatitis.
20. The omission of drainage in operations on the common duct.
21. A method of closure of the cystic duct after excision of the gall bladder.
22. The use of Thiersch skin grafts after radical breast amputation.
23. Replantation of entire limbs without vessel suture.

Naturally it should be of interest to inquire into the background of the man who was able to contribute so much to the science and practice of surgery. Dr. Halsted was graduated from Yale, where it was said that he showed no particular promise at the time. On entering medical school he worked laboriously in anatomy. Later he became assistant to Professor Dalton, the most stimulating and scientific teacher in the College of Physicians and Surgeons at that time. He was graduated from the College of Physicians and Surgeons in 1877 with the highest scholastic honor.

He obtained the highly prized position as intern at the Bellevue Hospital and served in that capacity for about 18 months. Then he studied and travelled abroad, especially at Vienna, Wurzburg, and Leipzig, which were the chief centers of the great German universities at the time. There he met the famous men of the day, including Billroth. And there in addition to his studies in surgery, he also devoted much of his time to studies in embryology, histology, anatomy and pathology. Unquestionably these two years abroad were very stimulating and broadening.

* Address delivered at the Founders' Day Banquet, Alpha Kappa Kappa Fraternity, Charleston, S. C., 4 March, 1955.

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He returned to New York in 1880 and remained there for five years, during which time he limited his practice to surgery. It is said that he was the first to do so in New York. One of his outstanding accomplishments during the New York period of his career was the establishment of an out-patient clinic at the Roosevelt Hospital, which type of clinic has persisted to this day.

In 1885 his health became very poor and he was inactive for a time until he moved to Baltimore to work in the laboratory of Dr. William H. Welch. There he remained until the opening of the Johns Hopkins Hospital in 1889, at which time the scope of his activities increased tremendously.

Let us review very briefly the history of surgery up to that period. In the days of Galen and Celsus, limbs of conscious men were amputated with an axe or guillotine. In much later days, a Lisfranck, a Dieffenbach, a Lizars or a Liston could disarticulate a hip in 5 minutes or less, provided one of the assistants was not injured during the process by the lightning maneuvers of the operator. There was a time when one could say of a master what was said of Fergusson, who in lithotomy proceeded with such lightning speed and skill that someone advised a prospective visitor to his clinic to "look out sharp, for if you only wink, you will miss the operation altogether."

At the beginning of Dr. Halsted's career, the fundamental principles of surgery having to do with the prevention of infection, the control of hemorrhage, with the handling of tissues, with drainage and with wound healing, were just beginning to be appreciated in a scheme of surgical procedure. Local and regional anesthesia were unknown. The cranial and thoracic cavities had been approached only in experimental entries, and neurological surgery and thoracic surgery as we know them today had not been developed. Surgery of the thyroid was just beginning. There was no successful operation for cancer of the breast and no successful treatment for hernia. A gastric resection had not yet been done. Intestinal resection with suture could scarcely be contemplated. In this country, surgery of the gall bladder and biliary tract was almost never considered. One might go on citing the limitations of surgery at that time.

Later, with anesthesia and asepsis as the master keys, experimental surgery received a new impetus and the horizon of surgery expanded rapidly. Roentgen's discovery of the x-rays then came in 1895-96 to inaugurate a new epoch in surgery, and by illuminating the body, incredibly multiplied the indications for surgical intervention. The Roentgen rays and the collaboration of the physiological, biochemical, bacteriological and pathological laboratories all combined to transform the entire face of surgery so that it became no longer recognizable in the light of its ancient portraitures.

What parts did Dr. Halsted play in these dramatic and sensational changes in the practice of surgery?

It was in the field of anesthesia that Dr. Halsted made one of his greatest contributions to surgery, if not his greatest. In 1898 and 1899 he was the discoverer of so-called "Conduction Anesthesia," of the German writers, better known to us as "nerve-blocking." This he discovered through his own initiative and through personal experiments upon himself. The discovery was promptly utilized in dental and oral practice. He formulated a general law which was to the effect that the infiltration of a sensory nerve tract or path with an analgesic was equal to anesthesia of its peripheral distribution. This in essence is still the very foundation of all the present and most useful methods of regional anesthesia. It is interesting to relate as told by Harvey Cushing that 15 years later when he, Cushing, rediscovered the principles of nerve-blocking and applied it successfully in operations on hernia, publishing his well-known paper upon the subject, he was utterly unaware that his chief had ever made studies of any sort on cocaine, so reticent was Dr. Halsted about this matter and so little did questions of priority interest him.

Among Halsted's early experiences, he performed successfully under regional anesthesia, an operation in which he freed the cords and nerves of the brachial plexus by blocking its roots in the neck with cocaine solution. It is interesting that this operation was performed

in a large tent which he had built and furnished at his own expense on the grounds of Bellevue Hospital, having found it impossible to carry out antiseptic precautions in the general amphitheater of Bellevue where, he said, "numerous antagonistic, anti-Listerian surgeons dominated and predominated."

Halsted was also extremely interested in general anesthesia and actually was one of the first to discover independently that gas and oxygen was a satisfactory anesthetic mixture under some circumstances. He also discovered independently a method of intra-tracheal ventilation and its application to intra-thoracic operations for purposes of artificial respiration and anesthesia. He was anticipated in the publication of these by the work of Meltzer and Auer.

Halsted was extremely modest, shy and retiring. Another illustration of his indifference to claims of priority occurred in 1922, when in the course of a discussion at the American Surgical Association of a paper by Dr. Edward Klapp of Philadelphia on "Refusion or Reinfusion of Blood in Hemorrhage," it came to light that Dr. Halsted had frequently practiced the procedure 31 years previously and had saved a number of lives by its application while acting as Surgeon at the old Chambers Street Hospital in New York. Credit had been given Johann Thiess of Leipzig as the originator of this method of reinfusion or autotransfusion. This surgeon had published his experience in 1914 when he had applied it for the relief of patients exsanguinated through extra-uterine pregnancy but Dr. Halsted had clearly antedated him by at least 31 years as anyone could see by consulting the files of the Annals of Surgery in 1884 and the Proceedings of the New York Surgical Society in 1883, in which he described his experiences and clinical applications of the principles of blood "refusion," as he termed it, in the treatment of illuminating gas poison. After copious blood-letting, the blood of the patient was collected, defibrinated and thereby sufficiently aerated to deprive it of its toxic properties. It was then filtered and reinfused into the radial artery of the same patient, thus administering an arterial contripetal infusion. The results obtained by this procedure were remarkable. Patients who were comatose would after bleeding promptly become conscious and even quite rational and upon the reinfusion of the defibrinated and de toxicated blood they would recover still further. The technique of refusion in hemorrhage as practiced at the present time is different in some respects but remains essentially the same in principle as that first applied by Halsted in the 1880's.

Possibly his next greatest contribution to surgery was in the field of aseptic technique. It was he who introduced the use of the rubber glove in 1890. The rubber gloves were used first by the operating nurse to protect her hands and forearms from the strong chemicals in which the instruments were disinfected. It is of interest that the then operating room nurse became the future Mrs. Halsted. Next it developed that the members of the operating team except the operator, wore gloves. The gloves were not worn by the operator because it was considered that their use would interfere with the tactile sense. It was not until Dr. James C. Bloodgood became the Resident Surgeon that the operator himself used rubber gloves, Dr. Bloodgood having served on the Resident Staff sufficiently long to have become accustomed to their use.

Probably the next greatest contribution of Halsted was in other phases of surgical technique. Halsted believed that the surgical approach to disease had two important branches: one had to do with fundamental principles of surgery, those concepts and techniques which must be understood and practiced if any surgical operation, no matter where performed upon the body, were to be successful; the other to do with specific surgical diseases. As a young surgeon, Dr. Halsted appreciated that surgery could not advance greatly until the fundamental principles were clarified, for his first important work lay in this field. His experiments showed that normal uninjured tissues have a very definite natural resistance to infection but when tissues are crushed, have their blood supply impaired or are otherwise traumatized, they lose their resistance to infection. The problem then was to conduct an operation with a minimum of injury to the

tissues in the operative field. He devised a clamp with a sharp point, known as the Halsted artery forceps, the purpose of which was to stop bleeding without crushing more than a minimum of tissue. He used the finest silk to tie the bleeding vessels, for silk can be completely sterilized by boiling and causes less inflammatory action in the tissues than catgut. He was wont to transfix the bleeding point so that the ligature might be drawn just tight enough to stop bleeding without unnecessarily strangulating tissue and yet without the danger of the ligature slipping off. He stopped all bleeding in a wound so that no blood could collect in tissue spaces. He did not pull or tear or otherwise roughly treat the tissues. He closed a wound by approximation of the tissues layer by layer with the finest silk sutures applied without tension in order not to impede their blood supply and thus retard healing. He devised a subcutaneous suture which approximated skin without involving the outer layers which harbor pathogenic organisms. Since he appreciated so clearly the sources of wound infection, he was opposed to the drainage of clean wounds, not only because drainage was a confession of careless surgery, but because infection may be introduced along the drain. But if drainage was necessary, or if the wound required packing, or if an open wound needed frequent dressing, he recognized that injury to delicate granulation tissue, the essential tissue in healing, should be avoided and for this purpose devised a filmlike guttapercha tissue which does not adhere to wound surfaces. It should be noted these refinements in surgical technique were not haphazard in origin; they were based upon a scientific approach to the problem by the experimental method, and had a profound effect upon surgery. The methods implied in the term "Halsted technique" spread and have been adopted by clinic after clinic until today they are recognized as the best and the safest techniques in surgery. To them must be attributed in no little measure the striking reduction in mortality in present-day operations.

The problems connected with the surgery of the thyroid gland also engaged his early interest, which was maintained throughout many years. At the time there were two chief forms of thyroid disease, the large colloid goitre and the exophthalmic goitre. Both conditions not infrequently caused death. They were a constant challenge, particularly to surgeons. But the blood vessels in these conditions were so enlarged and numerous that fatal hemorrhage was a real complication, so much so that eminent surgeons of the day declared that operations upon the thyroid were not justified. Dr. Halsted's studies led him among other things to devise and describe with admirable illustrations by Broedel an operation upon the thyroid gland, not only from the viewpoint of avoiding hemorrhage but of protecting the patient against removal of or injury to the parathyroid glands.

The story of the development of the surgical treatment of cancer of the breast is a long and interesting one with many contributors. Halsted revolutionized the surgical treatment of cancer of the breast around the turn of the century. He showed then by the thoroughness of his methods that the older technique of the operation could be so greatly improved that the percentage of local recurrences—which had up to that time ranged between 59% (Volkmann) and 85% (Billroth)—had dropped in his hands to the low figure of 6%, and if the regional recurrences away from the field of operation were included, the combined total of local and regional recurrence after three years observation did not exceed 22%. His operations on the breast for cancer established a standard of efficiency which had no precedent in the history of malignant disease. He showed that by operation the disease could be positively eradicated from its original focus of invasion and that even when it had advanced to what were usually regarded as impregnable intrenchments, the apex of the arm-pit and the neck, there was still hope of cure if the operation was performed as thoroughly as Dr. Halsted did it. Prior to the days of Dr. Halsted, an "amputation" of the breast was performed for cancer which consisted of a mammectomy performed in 15 or 20 minutes or less with a few rapid and sweeping strokes of the knife. Quite often the disease recurred in the wound before it had time to heal. Some surgeons of the

greatest experience such as Agnew frankly admitted that they had never been able to cure a cancer of the breast by operation or any other means.

Dr. Halsted's success in the ligation of the great and most dangerous arteries, the aorta, the innominate, subclavian, carotid and iliac, was outstanding. His ingenious device for the partial and progressive occlusion of the aorta and other great vessels in the cure of aneurysms was a great innovation.

He was the first surgeon to ligate the left subclavian in its first division successfully (1892). He again performed the same ligation in the thorax successfully on April 26, 1918, (in this case for a huge subclavian aneurysm). He also ligated simultaneously the left carotid, ligating both vessels near their aortic origin. This is probably the largest subclavian aneurysm ever operated upon. Two years after ligation he excised the sac, which had remained and was beginning to relapse, also with complete success. He ligated the subclavian in all 6 times for aneurysm, including two ligations of the first division of the left subclavian, followed in both instances by a secondary extirpation of the sac. The patients all recovered ideally without gangrene or added loss of function. The wounds all closed without drain, healed per primum, and in all the aneurysms were cured. He also ligated the innominate 5 times, all the patients recovering. He was the first to occlude successfully the thoracic aorta for high abdominal aneurysm with a partially occluding aluminum band, December 18th, 1905.

As for the rest, the same interest, originality and practical value was displayed in the techniques which he evolved for skin grafting, for the suture of wounds, for the radical care of hernia, for the resection and suture of the intestines, for the drainage and suture of the common bile duct at a time when most men were limiting their interventions to the gall bladder and the cystic duct.

His pupils included Cushing, Heuer and Dandy, to whom in succession he entrusted and virtually relegated the development and teaching of neurologic surgery in Hopkins. In this regard, Dr. Dandy was the first to use pneumoventriculography. His idea for this was due largely to the frequent comment by Dr. Halsted on the remarkable power of intestinal gases to perforate the bone, so that Dr. Dandy's attention was drawn to the practical possibility of its use as a contrast medium in the brain.

Halsted wished above all to establish a school of surgery which would eventually disseminate throughout the surgical world those principles and attributes which he considered sound and proper. His aim was to teach teachers, not merely competent operating surgeons. He therefore selected carefully as members of his resident staff men whom he considered unusually gifted and promising and who upon completion of their own training would be eager to go out and teach. It is tremendously interesting that from among the 238 residents and assistant residents under his direct training and residents trained by his residents, there became 37 professors of surgery, 14 clinical professors, 18 associate professors of surgery, 14 clinical associate professors, 17 assistant professors of surgery, 16 clinical assistant professors of surgery and 23 instructors in surgery.

According to René Leriche, a surgeon of Lyons, Halsted was the father of a school of surgery which may be described as the surgery of safety, of a technique which sacrificed everything to the immediate and future success of the operation and the welfare of the patient. He put in force the most rigorous asepsis and the most uncompromising discipline in guarding the tissues from insult by neglecting no details, no matter how small, that might compromise the issue and the thoroughness and finish with which he carried out the operative act. Beginning at a time when surgery was still living under the spell of the pre-anesthetic days, when rapidity of execution was given the highest premium, he stood firm upon the ground that the nature of the material upon which the surgeon exercised his handicraft is too noble and precious to be wasted. To do this effectively the surgeon must subordinate brilliancy and rapidity to safety. As an investigator, Halsted understood surgery as an experimental science, aiming at

his objective at the greater and deeper knowledge of the laws that govern physiological and pathological life.

Dr. Rudolph Matas, famous surgeon of New Orleans, in his memorial address on Dr. Halsted following his death, described him as

"Bold in those things that were safe or that he could safeguard by his own judgment and experience; fearful in those that were dangerous; avoiding all evil methods and practices; tender to the sick; honorable to the men of his profession; truthful, wise in his predictions, chaste, sober, pitiful, merciful, not covetous nor extortionate."

Dr. Halsted's gentleness, his great concern for suffering, his minute precautions against the unnecessary spilling or waste of blood, his watchfulness and anxiety about the fate of his patients afford one of the most touching and beautiful examples of the humanity and the humane qualities of the real surgeon.

Anyone who has attentively followed the progress of surgery would find it unnecessary to consult the Index Medicus for the information that his personal labors and example have left an indelible impression upon the history of surgery, not only in America but everywhere the language of surgery is spoken and taught.

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Care of Traumatic Wounds of the Extremities. Karl M. Lippert, M. D. Tri-State Med. Jour. 4:14-17, Mar. 1956.

Every severe wound deserves a maximum of surgical care. This care can only be given to proper extent in an adequately equipped hospital. An ordinary wound, within 6 hours can be treated under usual circumstances like a clean wound if proper local cleansing is done at the time of treatment. Delaying the treatment of a wound results in a "contaminated" wound which must then be treated as though infected and systemic therapy added to the local treatment. All wounds should have adequate debridement of the traumatized tissues with removal of devitalized skin, fat, fascia, and bone, as indicated. Closure should be of the skin only in clean wounds with no closure at all attempted in contaminated wounds. It is better that the contaminated wound be treated by the delayed or secondary closure after 7 to 10 days of local toilet to the wound.

Early suture of clean lacerations of tendons can be accomplished as a primary procedure when adequate exposure and a dry field is obtained, using fine silk sutures for the anastomosis. In case of dirty wounds, no tendon suture should be attempted at the primary treatment. After all infection has cleared and a healed wound is present the tendons can be considered for suture. A form of Bunnell suture technique should be employed with very fine silk or Number 34 or 35 surgical steel wire as suture material. Joint capsules when opened in injury should be cleansed and closed loosely without drainage. All traumatic wounds should be treated without drains or in-lying sutures to be tied at a later date. Drains and non-absorbable sutures left in a wound act as a foreign body. Treatment of fractured bones should follow that commonly characterized for the treatment of compound fractures, paying the same attention to the care of the soft tissue as outlined in the original paper. Use of antibiotics has no place in the local treatment of recent injury. They often cause more damage to tissue than the bacteria which contaminates tissue. Systemic use of antibiotics in adequate doses in all severe, contaminated wounds is advised by the parenteral route followed or supplemented with oral antibiotics until the wound is satisfactorily returned to normal condition. With proper surgical care to all traumatic wounds at the time of injury, life and limb will be spared to a great extent.

HOSPITAL DEATHS INCIDENT TO MAJOR SURGICAL OPERATIONS ON THE AGED

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The purpose of this paper is first, to call attention to the marked increase in the mortality rate in patients 75 years old and older who undergo major surgical procedures over that of those under age 75: second, to show that the reasonably low overall mortality of 6% to 8% depends upon the favorable results obtained in the 65 to 75 age group as well as the few deaths associated with herniorraphy, perineal and pelvic procedures and operations on the breast, and again to emphasize the dictum that elective major surgery should be undertaken on the elderly only after critical evaluation of the individual and satisfactory evidence that the anticipated benefits will justify the risk.

This communication is based upon an analysis of the mortality following 755 major operations performed in Lakewood City Hospital by members of the surgical staff during the five year period beginning with January 1948 and ending on the last of December 1952, on patients 65 years of age and older. (All were white).

Elderly patients are assuming an increasingly important role in surgery. They are not only actually more numerous, but percentage-wise are increasing faster than the general population of the United States.[1] Today, those 65 and over number 14,100,000 representing 8.6% of our total population while in 1900 there were 3.1 million or 4.1% of the population, which means that more and more of them will become candidates for major surgery. Again our present days knowledge of electrolytes, transfusions, blood chemistry, anesthesia and the introduction of the sulfa drugs and antibiotics enables us to suggest elective surgical therapy more freely than in the days when a herniorraphy, for example, was generally frowned upon if the individual was over 65. The factor of safety is greater. All types of surgery are safer than they were twenty years ago, but as will be shown, the mortality rate in the old is an especially important factor to consider when we recommend a major operation to an elderly patient.

During the years of 1948 through 1952 the Lakewood City Hospital mortality following 755 major operations on patients aged 65 and up was 6.7%. Contrary to the implication of the words "City Hospital" this institution receives very few ward patients. Almost 95% are private patients, finanically able to buy good food and thus nutritional problems are far fewer than those of a metropolitan hospital located in or near a slum area. This factor has a bearing on the mortality.

The staff is a so-called "open staff" and any qualified doctor practicing in Greater Cleveland is eligible for staff membership. The surgeons, with a few exceptions, are diplomates of the American Board of Surgery, members of the American College of Surgeons or both. All anesthetics are administered by doctors trained in this field and the department is directed by a Board certified anesthetist. The clinical laboratory is supervised by a full time pathologist.

Preoperative and postoperative care is that carried out in today's well equipped hospitals. Early ambulation is the rule and gastric intubation is a common practice. As elsewhere the therapy both before and after operations is so superior to that of the recent past, that even without the use of antibiotics and the sulfas the mortality and morbidity of surgery would be measurably reduced.

The statistics tabulated show several important findings, at least at Lakewood Hos-

pital. The mortality rate in both men and women 75 years of age and over is much higher than in those under 75, with a discouragingly high mortality in males of 80 and over. The one-third fewer deaths among women, than in men may be attributed to the greater vitality of the sex, for they not only withstood identical procedures better than the men, but in this series, recovered from 83 perineal and pelvic operations and 51 breast operations without one fatality. This will be shown in more detail in the consideration of some of the several categories.

The condensed tabulation of the Lakewood City Hospital series is as follows:

MALES

	Operations	*Deaths*	
65-69	180	14	7.2%
70-74	110	5	4.5%
75-79	86	10	11.7%
80 plus	35	11	31.4%

Oldest 91 (Died)

FEMALES

	Operations	*Deaths*	
65-69	167	1	5.6%
70-74	110	3	2.7%
75-79	39	3	7.7%
80 plus	28	4	14.3%

Oldest 90 (Recovered)

411 Men— 40 Deaths— 9.9% Mortality
344 Women— 11 Deaths— 3.2% Mortality
OVERALL MORTALITY—6.7%

The summaries of two other papers which tabulated mortality rates in patients of 60 years and up are of interest because one series lists concurrent diseases and confirms the marked increase in deaths in those of 70 years and over, while the other notes a 6% incidence of wound dehisence.

354 Major operations in 311 patients 60 and over.[2]
9% Operative mortality 10.2% per patient
Emergency cases 22% mortality
Elective cases 5.7% mortality
Wound Dehisence 6%—2% in transverse incisions
Hospital mortality all cases major surgery 3%
Hospital mortality age 60 and over 9.6%

Age	*Class*	*Deaths*	
60-64	195	12	6.5%
65-69	146	8	5.4%
70-79	118	19	16%
80-89	37	8	22%

240—Free from other disease
256—With associated disease
49—Arteriosclerotics including kidney, myocardium and coronary — 180 Hypertensives — 22 Diabetics[3]

A brief review of some of the surgical procedures is of interest and gives some enlightening information.

A preoperative diagnosis of acute appendicitis was made in 15 men and 15 women. Three men and one woman died. Post-operative diagnosis failed to confirm the preoperative diagnosis in seven instances, and supports the well known fact that acute appendicitis in the aged is often difficult to recognize. Early and accurate diagnosis should lead to more favorable results.

Errors

1—Carcinoma of the cecum (resected) Died
5—Enteritis All Recovered
1—Coronary thrombosis—proven at autopsy

Operations on the breast are summarized because they were without mortality, and because 15 out of 45 malignant growths were treated by simple mastectomy. Of passing interest is the proportion of malignant to benign tumors:

	Malignant	*Benign*	*Radical Surgery*	*Mastectomy Only*
65-69	22	1	16	7
70-74	15	3	8	10
75-79	7	2	5	4
80 plus	1	1	0	2
	45	7	29	23

Operations on the gall bladder and common duct were performed three times more often on women than men, a slightly higher ratio than the commonly quoted proportion of 4 to 1, which in this small series, limited to those of advanced age, may be of no significance. However, the markedly higher mortality among the men is of importance and we must be very sure of our ground before recommending surgery when the condition neither threatens life nor causes intolerable symptoms. We should evaluate carefully the severity of the disease, the operative risk and the life expectancy, and ask ourselves whether the patient might better be allowed to suffer a tolerable amount of discomfort, rather than to be submitted to operation. What may be sound advice for younger patients with many years ahead of them may not be proper counsel for the groups we are discussing. We can be guided only by conclusions arrived at after

thoughtful deliberation. The decision for or against surgery is difficult.

The gall bladder was removed in all except two:

Gall Bladder

Women

	Cases	*Acute*	*Chronic*	*Mortality*
65-69	23	4	19	0
70-74	20	5	15	2
75-79	9	2	7	1
80 plus	2	0	2	0
	54	11	43	3

5.5% Mortality

Men

65-69	7	2	5	1
70-74	7	3	4	1
75-79	4	1	3	1
80 plus	None	—	—	—
	18	6	12	3

16.6% Mortality

Combined Mortality—8.3%

The death rate, so much greater than in the middle aged and younger, emphasizes the necessity for being cautious when we elect to operate on those who are 65 or older.

The minimum risk of herniorraphy helps to keep the overall mortality in the aged at the 6 to 8 percent rate.

Males

Inguinal Hernias

Age	*Patients*	*Unilateral Repair*	*Bilateral Repair*
65-69	30	25	5
70-74	23	20	3
75-79	8	6	2
80 plus	2	2	0
	63	53	10

No deaths

Six were operated on for femoral hernia.

Five were operated on for incisional hernia and one for umbilical hernia.

All recovered.

Only 21 herniorraphies were done on women, one of whom failed to survive the resection of a gangrenous loop of bowel.

A small number of benign lesions of the stomach indicate that gastro-enterostomy still has its place in the treatment of pyloric obstruction. Ten of the thirty-one patients withstood gastro-enterostomy without a fatality, while of 21 subjected to gastrectomy four died, which results should make us consider carefully the procedure to be employed. Gastro-enterostomy gives excellent results in older patients. They do not get marginal ulcer, and their stomachs empty in a satisfactory manner, therefore, if we can assure ourselves that the lesion is non-malignant a posterior gastro-enterostomy is the operation of choice for patients in the upper age brackets. They may be expected to live out their remaining years in comfort.

Carcinoma of the stomach was encountered in 15 men and 4 women in only 7 of whom was definitive treatment regarded as worthwhile. The others were too advanced to offer a prospect of cure, and in 6 a palative gastro-enterostomy was done while the remainder were explored and closed. There were 4 deaths. Only earlier diagnosis will bring somewhat better results. At best, the picture is a grim one.

Operations for malignant conditions of the large intestine carry a high mortality. Eight out of 41 died following a resection done in the hope of cure, while palliative procedures in 13 resulted in 3 deaths. Let us hope that this 20% mortality can be reduced. The risk is justified since without surgery death is inevitable. The anticipated benefits warrant operation.

Eighty three major operations on the pelvis and perineum were done without a fatality.

Anterior and posterior colporraphy	34
Anterior and posterior colporraphy with hysterectomy	21
LeFort operations	8
Watkins transposition	5
Abdominal hysterectomy	10
Abdominal supracervical	2
Uterine suspensions	2
Ovarian cyst	1

None of the women was over 75, and we marvel at their ability to withstand these severe procedures.

The statistical study of prostatic surgery merits attention:

Age	*Cases*	*Transurethral Resection*	*Supra-pubic*	*Mortality*
65-69	74	43	27	2
		1 Perineal	1 Retropubic	
70-74	59	35	24	2
75-79	33	25	8	1
80 plus	45	26	19	6
	211	131	78	11

Mortality 65-69 3% — Mortality 80 plus 13.3%
Mortality Overall 5.2%

A tabulation of deaths following operative procedures on the prostate is given because it shows clearly the increased hazard met with in those over 75 years of age.

Age	*Growth*	*Procedure*
66	Benign	Transurethral Resection
67	Benign	Suprapubic
74	Carcinoma	Suprapubic
74	Carcinoma	Suprapubic
78	Benign	Transurethral Resection
81	Benign	Suprapubic
84	Benign	Transurethral Resection
84	Benign	Transurethral Resection
84	Benign	Suprapubic
87	Benign	Transurethral Resection
91	Carcinoma Palliative	Fulguration

Even though we exclude the 91 year old man on whom palliative fulguration was used, we find that half of the deaths in a series of 211 occured in 72 patients all of whom were in the two upper brackets. Further, it will be noted that the mortality of suprapubic prostatectomy is 7.5%, approximately double that of transurethral resection, and the urologist should have very substantial reasons for electing the suprapubic approach.

Malignancy is found so frequently associated with enlargement of the prostate that a summary of its incidence demands inclusion in this paper.

	Pre-Op. Diagnosis		*Post-Op. Diagnosis*	
Age	*Benign*	*Malignant Change*	*Benign*	*Malignant Change*
65-69	60	14	56	18
70-74	55	4	52	7
75-79	28	5	23	10
80 plus	44	1	42	3
	187	24	173	38 or 18.4%

It will be noted that carcinoma was found present in 14 prostates in which the preoperative diagnosis was benign hypertrophy, and that even in the younger group carcinoma of the prostate is found in one-third of those who undergo operation. No explanation is offered as to why in the 70-74 aged patients in only 7 out of 59 was malignancy found. Likewise, the men over 80 had a relatively small number of carcinomatous glands.

A detailed discussion of the miscellaneous surgical procedures may be properly omitted. These include 7 thyroidectomies, 8 lumbar sympathectomies and one or two each for some 25 serious conditions such as carcinoma of the larynrx, two for rupture-diverticular of the sigmoid. The patients having thryoidectomies and sympathectamies all recovered, while out of 25 operated on for miscellaneous conditions two died. No conclusions can be drawn and an attempt to do so would be inappropriate.

Orthopedic operations and their outcome have not been studied. Probably their inclusion would have little bearing on the general conclusions to be drawn from the results tabulated.

In summary, an emphasis of a few facts brought out in the analysis of the mortality in patients from 65 years of age to over 80 submitted to major operations is worthwhile.

Procedures involving the breast, hernia, and perineum and pelvis may be advised with considerable confidence. These are well tolerated.

Major surgery on patients 75 and upward, should only be undertaken when the condition either threatens life itself or is associated with intolerable discomfort.

The probable life expectancy of the individual is another factor to be considered when we decide for or against an elective operation on the aged. An operation which is fully justified in the middle-aged, may not be warranted in the elderly.

We may expect the aged to make up an increasing percentage of our hospital population and their surgical problems will play a more and more important role than in the past. Surgical conditions threatening life allow us little choice. We must do what we can. The elective call for a decision based on thoughtful evaluation.

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ELECTROCARDIOGRAM OF THE MONTH* – T WAVES

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Case Record—Two medical students having no history or findings suggestive of heart disease served as subjects for the following experiment. An electrocardiogram was recorded on each one according to conventional procedure with the subject lying quietly in the supine position. He was then asked to drink one glass of ice water and the tracing was repeated within a few minutes thereafter under exactly the same circumstances. Both subjects showed almost identical electrocardiographic changes following the administration of the ice water. Tracings recorded before and after from one of the subjects, a 23 year old male, are reproduced below.

*One of a series of clinical-electrocardiographic correlations. Purpose of this series is the presentation, not of necessarily rare or unusual ECGs, but of those which illustrate basic electrocardiographic principles or which contribute prominently to the clinic diagnosis.

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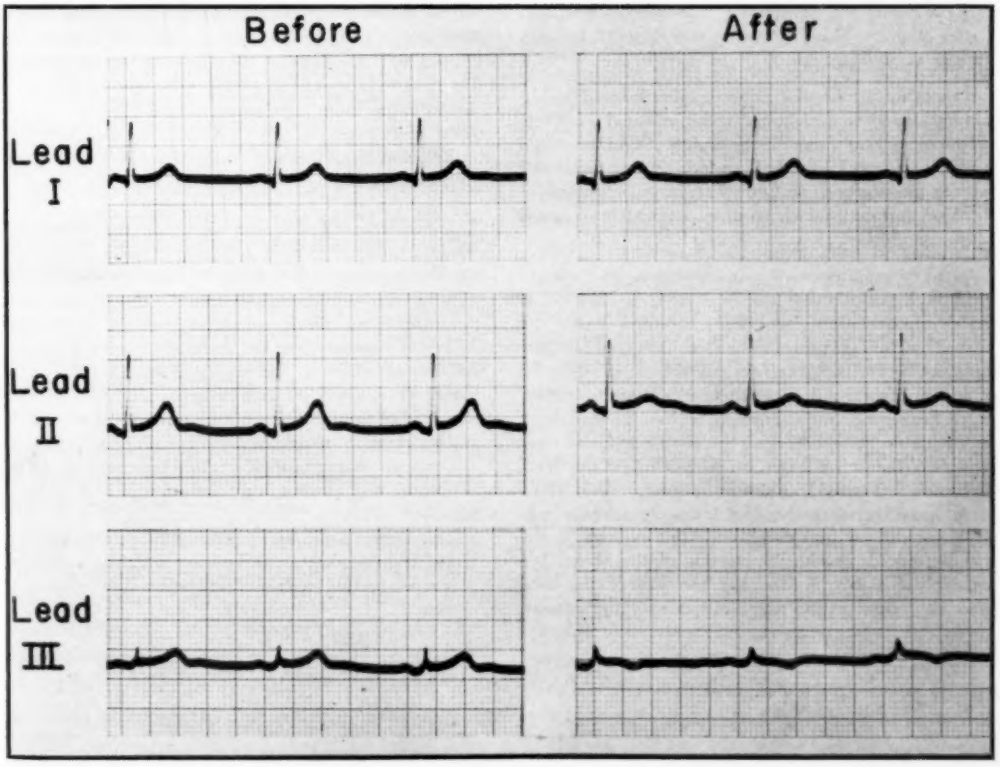
Electrocardiogram—The control tracing on the left is within normal limits. There is slight elevation of the ST segments in leads 2 and 3 but this is less than 1 mm. and is not ordinarily reported. Small U waves can be seen in leads 2 and 3, of no known significance. All T waves are upright.

After administration of ice water the T waves change remarkably, becoming of much lower amplitude in lead 2 and completely inverting in lead 3. QRS complexes remain the same throughout; it is the T wave deflections which are selectively affected by the ice water, most markedly so in lead 3.

Discussion—Many factors besides myocardial disease influence the size, shape and direction of T waves. Since a T wave results from the process of repolarization of the ventricular muscle, and since this repolarization wave normally proceeds across the muscle in opposite direction to the preceding depolariza-



tion wave but is also of opposite polarity to the depolarization wave, the T wave deflection is normally in the same direction as the main component of the QRS deflection. Alterations in the T wave are readily produced by anything which alters the anatomic position of the heart, such as deep inspiration, distention of the stomach, or going from the supine to erect position. However, all these are associated with some shift in axis of the QRS complexes also, and this does not occur in these tracings.

Something therefore has caused at least a portion of the ventricular wall to repolarize in a different direction. Electrolyte imbalances, smoking, anoxia, acidosis, drugs such as digitalis, or any toxic reaction as from a systemic infection are all capable of producing T wave changes which are not unlike those produced by myocardial disease. Likewise endocrine disturbances, fever, increased pressure within the ventricles, or any factor which appreciably alters the physicochemical status of the muscle may alter the T wave. Such variations in T waves must be looked upon as non-specific. Obviously, those which persist, or those which progress through a recognizable pattern of evolutionary changes in sequential electrocardiograms are more indicative of actual cardiac disease. *As a general rule, any diagnosis of coronary or myocardial disease based on T wave abnormalities alone is a far more precarious diagnosis than one based on abnormalities in the QRS complex.* Both, of course, should be correlated with the overall clinical findings.

Perhaps the most likely explanation of the transient alterations in T waves pictured here is that of an actual cooling of the posterior or diaphragmatic surface of the heart since it is known that repolarization is influenced by temperature changes.

Practical Considerations Regarding Tracheotomy: Surgical Errors and Safeguards, by Nicholas Georgiade, Carter Maguire, Hugh Crawford and Kenneth Pickrell. (J.A.M.A. 160:940-942, Mar. 17, 1956)

Except in instances of unpredictable trauma, tracheotomy should be anticipated and performed electively in the operating room under aseptic conditions and with proper assistance. This includes burns, neck surgery in the newborn and all radical cancer surgery of the head and neck which requires removal of a portion of the mandible.

In performing an elective tracheotomy, the patient's head is hyperextended and a transverse incision is made approximately two finger-breadths above the sternal notch. The strap muscles are retracted laterally and the thyroid isthmus is identified in the superior aspect of the wound. The trachea is freed anteriorly of all fascia and firmly grasped with a tracheal hook on each side at the level of the fourth tracheal ring. A vertical incision is made in the trachea at this level and converted to a "T" shape by making a small transverse incision superiorly. The tracheotomy tube can easily be slipped into place since the opening in the trachea spreads due to the traction of the hooks. We usually use a No. 5 tube but the size of the tube must be related to the size and needs of the patient.

Complications of tracheotomy include hemorrhage, subcutaneous emphysema, laryngeal stenosis, laceration of the anterior esophageal wall and encrustation of the trachea. Postoperatively, it is imperative that the patient be placed in a room with increased humidity and that infants be placed in a Croupette or Isolette.

The paper is illustrated with both photographs and illustrations.

Tonometry and The Cornea by J. W. Jervey, Jr., M. D.
Transactions of the American Ophthalmological Society, 1955

Disturbance usually seen in corneal epithelium following tonometry is the result of trauma from the instrument added to the effects of local anesthesia. It varies in amount directly with age of the patient, duration of application of the tonometer, and weight of the plunger assembly.

Physical characteristics of the tonometer help to determine the amount and character of the disturbance.

The cornea can, to a measurable extent, be protected from tonometric trauma by instilling a drop of 1 percent methyl cellulose just before the instrument is used.

THE IMPORTANCE OF PERIODIC CANCER DETECTION EXAMINATIONS

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Each spring, the American Cancer Society begins a cancer detection crusade. This year the theme of the crusade will emphasize the importance of periodic cancer detection examinations by private physicians. I would like to add my hearty endorsement to such a campaign and to discuss some of the benefits to be derived by the physician and his patients.

The individual physician occupies a key position in the present-day fight against cancer. His rapport with his patients places him in a unique position to obtain an early diagnosis and to institute prompt curative treatment. Such a relationship does not exist usually between an impersonal organization and the general public.

There are many advantages to the physician as well as to the patient in a program of periodic cancer detection. The physician in so doing is discharging a well recognized duty to his patients in disease prevention. Furthermore, education of the public to the dangers of cancer has produced a fear of cancer among many people. This is a healthy condition if it induces them to watch for the signs of early cancer and participate in a program of cancer detection. A negative examination by the family physician not only allows him to keep in contact with many patients he would not ordinarily have an opportunity to see, but also to obtain grateful patients relieved of cancer-dread. This is true, also, of patients who are found to have cancer early, and who are cured of their disease. A number of other ailments requiring treatment may be found during a cancer detection examination.

The cancer detection examination should include a complete history and physical examination, urinalysis, complete blood count, and routine chest x-ray. More complete laboratory or x-ray examinations are done if indicated. The history should include a review of the previous illnesses of the patient and careful review of family cancer history.

The value of a physical examination for the detection of cancer is proportionate to the thoroughness with which it is carried out. The skin should be inspected in its entirety. Careful examination of all orifices should be done. Endoscopic examination should not be neglected, and certainly rectal and pelvic digital examinations are of paramount importance. The presence of hemorrhoids below may indicate a malignancy above. Unexplained hypochromic microcytic anemia may point to the need of a barium study of the colon. Careful check of lymph nodes should also be done. The value of the Papanicolauo smear in the detection of cervical cancer cannot be overemphasized and this should be more frequently used. This test is also of value in the detection of gastric cancer and carcinoma of the lung. The use of x-ray examination of the upper gastrointestinal tract in patients with mild persistent digestive complaints, along with tests for gastric acidity, and for occult blood in the stool, are to be recommended.

The cost of the examination will, of course, vary according to the number of additional procedures that are necessary, but should be moderate in view of the number of expected negative examinations. Excessive charges would also have the effect of discouraging repeat examinations at regular intervals, which would be the ideal in any well directed cancer detection program.

As a surgeon, I was interested to read in a recent publication of the American Cancer Society that the cancer death rate among surgeons is only 66 per cent of the general rate, or one-third lower. They concluded that surgeons not only have proper knowledge of cancer facts but they act promptly on that knowledge. Many surveys on cancer mortality emphasize the importance of acting quickly once the presence of cancer is detected. Thus, Chamberlain, in a recent survey on lung cancer stated that an average of 2-3 months delay followed the demonstration of the carcinoma and its removal in a large series of cases. Hence, we see that if we are to lower the death rate further in various forms of cancer we must shorten the time prior to detection of the cancer and minimize any delay after its

demonstration. Reticence in advising surgery until we are sure cancer is present may mean delaying the treatment beyond the time when a cure can be expected. The presence of a questionable lesion, whether it be in the breast, cervix, or lung, constitutes an emergency situation. The accompanying table (table I) published by the American Cancer Society serves to emphasize what we have to gain in lives saved by prompt treatment of various types of cancer.

The following case reports were selected from the files of the Cancer Clinic of the Spartanburg General Hospital to illustrate the value of routine cancer detection examinations:

A 50 year old, white, married female, gravida VI para VI, had an examination in a cancer detection center in January, 1955. At this time examination of the cervix revealed evidence of mild cervicitis. A Papanicolaou smear was taken. This was reported to show evidence of possible malignancy. Accordingly, a biopsy was made from the cervix which revealed intraepithelial carcinoma of the cervix. On Feb. 1, 1955, the patient was admitted to Spartanburg General Hospital and on the following day bilateral salpingo-oophorectomy and panhysterectomy were done. On pathological examination chronic cervicitis with intraepithelial squamous carcinoma was found. Follow-up examinations at six months intervals after surgery have shown no evidence of recurrence.

A 42 year old white female was seen in the office of a local physician for a routine cancer detection examination. On examination a darkly pigmented lesion was found on the skin of the left scapular region. Further questioning revealed that there had been some stinging sensation in the mole and that there was some bleeding from the mole three days before. The patient was admitted to Spartanburg General Hospital on Jan. 1, 1956 and a wide excision of this lesion was done and a skin graft applied to the defect. Pathological examination revealed a malignant melanoma of the back of the shoulder.

The first case illustrates well the value of cytological examination of cervical and vaginal smears as a part of the routine cancer detection examination in females. The pathology department at our hospital suggests that smears be taken from the posterior fornix of the vagina and from the endocervix. For the latter, either a small currette or a small bulb suction may be used to obtain cells from the cervical canal. Smears should then be made on several clean slides. The slides should then be immersed in an alcohol-ether mixture before they are completely dry in order to obtain a satisfactory stain.

In conclusion, I would like to emphasize the importance of the routine chest x-ray as an important screening procedure for carcinoma of the lung. According to Ochsner, this simple procedure will provide immediate diagnosis in 84 per cent of the instances in which carcinoma is present. I would like to refer again to Table I to demonstrate the importance of carcinoma of the lung as a cause of death from malignancy. In a man past 40 with a history of cigarette smoking over a considerable period of time, the demonstration of a silent lesion by x-ray represents a most happy diagnostic find, since according to Overholt as many as 75 percent of such lesions will show no evidence of lymphatic spread at the time of resection.

As we begin this drive, let us try to prevent the one out of every four cancer deaths that occur needlessly because treatment was begun too late!

Table I

Kind of Cancer	Present cure percentages	Possible cure percentages	Lives now lost each year	Lives lost which could have been saved through earlier detection
Uterine cancer	30%	70%	15,000	8,600
Breast cancer	35%	70%	20,000	10,800
Rectal cancer	15%	70%	10,000	6,500
Mouth cancer	35%	65%	3,000	1,400
Skin cancer	85%	95%	3,000	2,000
Lung cancer	5%	50%	24,000	11,400

Committee Reports

COMMITTEE ON MATERNAL WELFARE

The Committee on Maternal Welfare does not have a report at this time. Its chairman, Dr. Frank B. C. Geibel, had a coronary a few weeks ago. The data is in his possession and he is at this time not able to make it available.

We should like, however, to state that in 1955 there were a total of 65 maternal deaths, four white and 61 colored. This is a reduction of seven deaths over 1954 when there were 72 maternal deaths, 19 white and 53 colored. Hemorrhage far out-ranked the other causes of deaths, next being embolus (pulmonary, coronary and cerebral), and third was toxemia. It was noted that there were only three deaths from infection, which up until this year has been one of the three leading causes of maternal deaths in South Carolina. We do not have access to the records giving the opinion of the Committee as to the number of preventable deaths and as to the cause of death after review by the Committee. A full report will be presented later.

Hilla Sheriff, M. D.
Secretary

INSURANCE COMMITTEE

Your Insurance Committee this year continued its study of mal-practice insurance, retirement income insurance, and health and accident insurance for the Association.

1. So far as mal-practice insurance was concerned, it is still considered not feasible to attempt to get this insurance on a group basis. The companies continue to shy away from mass insurance of this kind. However, it may be of interest to the Association to note the favorable position that South Carolina physicians are in at the present time so far as premiums for this type of insurance is concerned. Generally, the Southern states where mal-practice suits have been less than those of their Northern neighbors, the mal-practice insurance rates are less. The State of South Carolina moreover enjoys a much more favorable rate than does other Southern states even. For instance, a basic policy of $5,000/$10,000/$5,000 coverage for a physician in South Carolina costs $30 per year. In North Carolina this same coverage costs $45 per year. The Insurance Committee recommends that our Association take cognizance of this fact and do everything within our power to keep these premium rates low. The rates, of course, are due to experience rating of the various companies concerning mal-practice suits within the State. We all realize that most mal-practice suits are a sort of blackmail, and, in fact, are not much less than legalized extortion. In view of this fact, it is hard to keep an eager-beaver lawyer from bringing suit for a discontented patient. However, if we practice our medicine as it should be practiced, we have nothing to fear from this type of extortion, and if our Association presents a united front against such attempts and does away with petty jealousies and discontent within its own ranks, we should not fear adverse medical testimony, against a conscientious practitioner.

2. The study of plans for retirement income are still in abeyance, pending Social Security Legislation now in Congress. Whether or not physicians are to be included in the Social Security Bill will have a bearing on our Insurance Program. Also, the passage of Jenkins-Keogh-Reed-type Bills will have a great deal to do with the plans as we shall want to present them. We hope that by next year we will be able to offer something definite along this line.

3. Health and Accident Insurance: To complete this report, we would like to incorporate a letter written by your Insurance Committee and received by each doctor in the Association concerning health and accident insurance.

"To All Members of The South Carolina Medical Association:

"The South Carolina Medical Association has secured accident and health coverage for its members through the Educators Mutual Insurance Company of Lancaster, Pennsylvania.

"This insurance comes to us a a result of over a year's study by your Insurance Committee of various plans offered to our Association by insurance firms from all over the country. In all, about seventy-two (72) different plans were studied. These plans were first obtained for us through our insurance representative, Mr. Ransome Williams of Columbia, South Carolina; and he, in turn, submitted to your Insurance Committee for their study the four which he considered the best of the lot. Of these four, your Insurance Committee felt that the one offered by Educators Mutual Insurance Company was by far the best that the Committee had ever seen.

"This plan will be presented to you in detail through a brochure which should reach you through the mails in the next day or two. You will notice coverage is available in amounts from $25.00 per week up to $100.00 per week, according to the option and plan that you select, and is payable either for five years or for life.

"We do not believe that there is on the market today a more comprehensive and complete policy at comparable rates. As you know, by buying this insurance as an Association we have been accorded certain definite advantages: (1) During the installation per-

iod every member of our Association is guaranteed coverage regardless of his physical condition as long as he is actively at work in the practice of his profession and is under sixty-five (65) years of age. (2) There are two plans which call for payment of benefits for sickness up to five years or for life, affording a choice of different options to suit the individual budget. (3) No individual policy can be cancelled by the insurance company after it is issued unless all such policies issued to members of our Association are terminated at the same time on an anniversary renewal date. This means that once your policy is issued the chances are very slim that you will lose it, since in order for the insurance to become effective, 51% of the membership of our Association must take the coverage, and any company that has seven or eight hundred policies issued in one State will think a very, very long time before lapsing insurance on this magnitude. (4) The premium is considerably less than usually charged for policies with individual underwriting.

"This is a cooperative effort on the part of the South Carolina Medical Association to work with the Educators Mutual Insurance Company to build up a program of accident and health insurance in this State which will be of great benefit to both parties. Considerable time and study were put into this proposal by the Educators Mutual Insurance Company.

"It is of interest to note that the sickness benefit for life which is included in Plan #2 of this coverage with its non-confinement privileges is unique in insurance coverage—particularly since the initial period of non-confining insurance is for five years before the life-time benefit rate starts.

"In order for this insurance to be effective it has been previously stated that 51% of the membership must participate. In order for the representatives of the Educators Mutual Insurance Company to canvass all of the doctors who will want to take this coverage, it is necessary that we as members of the South Carolina Medical Association cooperate with them to this extent: When we receive the brochure which describes this insurance, it should be studied carefully and the application blank filled out and returned as soon as possible. It is hoped that 51% of the membership will subscribe by mail within a few weeks so that the plan might get started at once.

"However, if the required percentage does not respond to application by mail, our members will be called upon individually by representatives of the Company who will be glad to answer any questions which may not be clarified by the brochure. If it is necessary for these men to make a personal visit in order to explain the plan, your Insurance Committee earnestly requests that you afford them every courtesy. They are not trying to sell you anything, but to give you an opportunity to participate in what we consider the finest plan of accident and health insurance ever offered to any organization.

"Attached to this letter is a business card which, when presented by Mr. Arthur T. Ousley or Mr. J. Boyce Talbert, Jr., will identify them as General Agents for Educators Mutual Insurance Company, and authorized insurance representatives of the South Carolina Medical Association. When your office nurse hands you this card with the statement that the representative is in your waiting room, please make an honest effort to see him as soon as possible so that he might go on to the next doctors on his list, thereby facilitating and expediting the handling of this program."

The Insurance Committee recommends that an Insurance Committee be continued so that further study of this important subject can be kept up-to-date for the Association.

Respectfully Submitted,

R. W. Hanckel, Jr. E. D. Guyton

Joseph P. Cain, Jr., Chairman

COMMITTEE ON LEGISLATION AND PUBLIC POLICY

Your Committee has, during the past year, conferred with other Committee Chairmen, officers of local societies, members of council, the President of the South Carolina Medical Association, and representatives of the American Medical Association in matters pertaining to legislation and public policy in this State and nationally. Your Committee was represented at the Regional Legislative Conference held in Atlanta, Georgia on November 6, 1955, at which time matters pertaining to national legislation in which the medical profession was interested, was discussed. Letters were sent to members of the National Congress concerning bills in which the Medical Association had interests, particularly true in the case of the Social Security Act.

The two most important bills before the South Carolina legislature in which doctors had interest were the bill to outlaw naturopathy in South Carolina and a bill of the optometrists in which they sought more equal recognition with the ophthalmologists of the state. The bill on naturopathy developed into a very hot fight in the legislative halls and behind the scenes. Your committee cooperated with council in conferences, spoke against the measure in committee hearings, and individually informed many members of the legislature as to the true facts in the naturopathy case. Little opposition developed in the House; however, in the Senate very strong opposition developed to the position of the Medical Association and numerous amendments were attempted to be attached to the bill. All of the amendments were killed. When the final vote was taken on the Naturopathic Bill, no dissenting voice could be heard.

Your Committee indorsed heartily and sought in every way to cooperate with the ophthalmologists of the state in fighting the Optometrists Bill. Much information was passed individually to senators which was helpful in giving them information concerning

the bill. At present the bill is in the committee and although attempts have been made to get it out of the committee, it appears that it will probably stay there until the end of the session.

At the 1955 meeting of the South Carolina Medical Association two resolutions were referred to the Committee on Legislation and Public Policy. One had to do with the administration of diphtheria vaccine and the other with noise in industry. The recommendations of the Committee are as follows:

A. The resolution submitted by Dr. R. L. Crawford of the Kershaw Medical Society was as follows: "WHEREAS, Diphtheria is a preventable disease and because it is still prevelant in our State, BE IT RESOLVED, That this body go on record as favoring legislation for compulsory diphtheria immunization of all children by their first birthday."

Recommendation—Approved.

The question of how and where it will be enforced was brought up by one member of the Committee. The Society might make some recommendation in this regard or leave this detail to be worked out by those preparing such legislation.

B. Noise in industry—The suggestions for South Carolina included in the resolutions are as follows:

1. "A new department of the State Board of Health headed by an otologist and employing some audiologists and industrial engineers for the following purpose:
   (a) Control of noises in industry which are preventable.
   (b) Pre-employment audiograms, to put the right persons at the right jobs and to prevent deafness caused in already hard-of-hearing persons.
   (c) Routine examination with audiograms every six months.
2. Amendment of the Workmen's Compensation Act to specify the amount of liability in case of hearing loss, using the Wisconsin Act as a helpful guide.
3. To permit the otologists or even ask them to talk to industry to get their cooperation for noise control and an audiometer examination prior to a law requiring that."

Recommendation of Committee: The general consensus of opinion was that this resolution demands further study. It was generally felt that we should be ready to advise the legislature or Workmen's Compensation Commission concerning this matter but should not take the lead in promoting legislation at present. We feel that further study is necessary.

Respectfully submitted,
Frank C. Owens, M. D., Chairman

COMMITTEE ON THE CARE OF THE PATIENT

The Committee on the Care of the Patient did not have a meeting during the past year. The Chairman feels that this is an important committee and could do some good work under a different setup, and recommends its continuation.

E. C. Hood, Chairman

REPORT OF CANCER COMMISSION

The Cancer Commission continued to serve in an advisory capacity to the Division of Cancer Control of the State Board of Health. All Cancer Commission meetings were held jointly with the Executive Committee of the South Carolina Division of the American Cancer Society in order to dovetail the cancer control activities of the State Board of Health and the voluntary agency. The cordial relationship between the State Board of Health and the South Carolina Division of the American Cancer Society continues with the result that the cancer problem is being attacked cooperatively, systematically, and vigorously.

Your Cancer Commission is happy to report that state money for the hospitalization of indigent state-aid cancer patients was increased from $275,000.00 to $325,000.00 for the fiscal year beginning July 1, 1955. Because of this increase in the appropriation it appears that the 11 state-aid cancer clinics operated by the Division of Cancer Control, State Board of Health, will function for a twelve months period.

A formal application from the members of the Greenwood County Medical Society to open a state-aid cancer clinic at the Self Memorial Hospital was received. The Cancer Commission passed favorably on this application and its first cancer clinic session was held in September 1955.

Upon our recommendation the Division of Cancer Control, State Board of Health, assumed the financial responsibility for the salaries and travel of two field nurses who were formerly paid by the South Carolina Division of the American Cancer Society.

It should be called to your attention that the American College of Surgeons has changed its approval procedure for cancer clinics. This revision states "It shall be a requirement for approval of cancer clinics that a properly functioning cancer registry be in operation which records every patient, private and public, in-patient and out-patient, upon whom the diagnosis of cancer is established.

It is gratifying that the state-aid cancer clinic personnel, et al, are working towards setting up all-inclusive cancer registries. In this new procedure follow-up reports will be periodically requested by the Cancer Registries from the cancer patient's private physician. The follow-up form sent to the private physician will require very little writing by the private physician but will contain sufficient data to keep the Cancer Registry up to date on the private cancer patient's status, and will provide a clear picture of the cancer problem in this state. Of course, the information received from the physician relative to his private patients will be used only for statistical purposes, and there will be no interference with the

handling of the patient by his physician. Your cooperation in this project is earnestly requested.

In conclusion, your Cancer Commission wishes to state that progress is being made in the cancer control efforts, and wishes to thank each physician in South Carolina for his interest, cooperation and assistance in furthering this Program.

Dr. J. R. Young, Chairman

Dr. John C. Hawk, Jr.	Dr. Thomas A. Pitts
Dr. R. C. Horger	Dr. Henry Plowden
Dr. M. Ed Parrish	Dr. Furman T. Wallace
Dr. Harold S. Pettit	Dr. John K. Webb

REPORT OF THE EXECUTIVE COMMITTEE OF THE STATE BOARD OF HEALTH

The Executive Committee of the State Board of Health attempts to give, in this its annual report, an overall picture of public health work in South Carolina. We will omit, as far as practical, statistics and details which can be found in the annual report to the Governor. We trust this meets with your approval.

It is our opinion that public health work in South Carolina has assumed its proper level. That is to say a good comprehensive program is being carried on with as little encroachment as possible on the rights of private practice. Also it is encouraging to see that the legislative bodies provide reasonable sums of money to maintain the work without too much pressure from the personnel of the several departments.

The work of all bureaus are operating upon a twelve month basis. For several years some work, notably the cancer program, had to be curtailed before the end of the year because of lack of funds. Last year and again this year, $50,000.00 was added to the appropriation by legislature for this cause and this has greatly improved the cancer work. There are now eleven cancer clinics operating in the state.

The tuberculosis campaign is being carried on in an efficient way by the combined efforts and splendid cooperation of those in the central office, the County Health Departments and the State Sanatorium. The heart work is also accomplishing fine results with the full cooperation of its several agencies.

The V. D. Control Section has brought out some interesting facts in regard to venereal diseases in this state. There are far more cases being reported now than in recent years. This is probably not due to an actual increase but to better cooperation on the part of the private physician in the matter of reporting his cases. For the past several years the private doctors have reported only 4.4% of all venereal cases from all sources. So far this year private physicians are now reporting over 37% of the cases. The report of cases by the private doctor has been very much retarded because of the fear of an embarrassing breach of confidence between him and his patient. It is not necessary to report by name unless the workers in this division are needed to assist in locating the source of the infection and helping to check to see that adequate treatment is being received. We would like to urge every doctor in our association to report all cases of venereal diseases so that a true estimate of the incidence of these diseases can be obtained.

In the Crippled Children Program it will be of interest to report that two Rheumatic Fever Clinics were re-established this year, one of these in Greenville and one in Columbia. As of January 1, 1956, there were 5,414 children on the Crippled Children Program. During the past calendar year, 3,216 children were treated under this program. The diagnoses fell mostly under the general groups of poliomyelitis, cerebral palsy, club feet and other congenital deformities, rheumatic fever and burns. The age limit at the Convalescent Home has been lifted from 12 years to the age limit served by the Crippled Children Program.

The establishment of a Physical Medicine Department of the Medical College in Charleston offers facilities for the treatment of paraplegics and other cases. Heretofore such cases had to be sent out of the state.

There was available this year a sum of money for the establishment of a Rehabilitation Center but there was no institution in the state that could furnish the matching funds necessary to qualify and the fund had to be turned over to another state. If similar funds are available during the coming year, we hope it can be kept in our own state.

We would like to call your attention to the rapidly increasing demands for service from the Bureau of Vital Statistics. More and more agencies and schools require facts as to date of births, deaths and marriages before granting benefits or settling claims. The department answers an average of approximately 250 requests daily.

The Legislature passed two acts which concern the relations between the doctor and the Vital Statistic Bureau. One was to increase the fee from fifty cents to one dollar for certified copies of birth, death and marriage certificates. The other act had to do with filing of records in regard to adoption of children.

The Division of Dental Health continues to promote dental health education with emphasis on fluridation of water supplies and topical application to teeth of school children. Seven thousand seven hundred and eighty eight received this treatment during the past 12 months.

Many of the divisions have been very busy with routine programs and much has been accomplished but will not be elaborated upon here in order that we may devote considerable space to the poliomyelitis prevention inoculation program.

After the demonstration in 1954 that the new poliomyelitis vaccine developed by Dr. Salk was effective in preventing paralytic poliomyelitis, South Carolina, with other states, was prepared to begin the inoculation of children with this vaccine in 1955. Soon after

the initiation of the vaccination program in April of 1955, some cases of paralytic poliomyelitis developed in some children given vaccine from one manufacturer. This resulted in a withdrawal of this manufacturer's vaccine and the cessation of the program for re-evaluation of the manufacture and testing techniques. This re-evaluation by the U. S. Public Health Service, with the advice of a group of experts on virology, discovered the difficulties in the testing of the vaccine and led to measures for correcting these errors. The vaccine was finally in accordance with the new methods of testing declared to be as safe as a vaccine could be made at the present time and the program of inoculating children was reinstated. As a matter of fact, South Carolina had no difficulties from any of the vaccine used in the State, which was from a different manufacturer than that which caused the early difficulties.

The National Foundation for Infantile Paralysis provided vaccine and sponsored a program of inoculating second grade school children. This program in South Carolina was carried out by the various County Health Departments with the assistance of volunteer private physicians and nurses. Under this program 118,075 children, or 78.8% of those enrolled in the second grade received first doses and 87,780 of this number received second doses. This is 58.6% of those enrolled in the second grade in South Carolina.

The National Poliomyelitis Vaccination Assistance Act of 1955 appropriated $791,998 as South Carolina's share in the poliomyelitis vaccination program. The State Board of Health was designated by the Governor as the State Agency to conduct this vaccination program in South Carolina. On the request of the State Board of Health a State Advisory Committee was appointed by the President of the South Carolina Medical Association consisting of three doctors, a representative of wholesale druggist, one retail druggist, one representative of the state parents and teachers, and one from the State Department of Education. The President of the State Medical Association and the State Health Officer were ex-officio members of the Committee.

The vaccine has been distributed to the counties on a population basis. The vaccine is administered in the various counties by the County Health Department and private physicians on the basis of agreements between the Health Departments and the local Medical Societies.

This vaccination program began in November, 1955. The vaccine was not readily accepted by the people during November and December and even the short supply of vaccine was adequate to supply the demands. During January and February the vaccination program became more acceptable to the public and requests for its administration to children have increased markedly each month since January. The supply has barely been sufficient to meet the demands in the first few months of 1956. There is some indication that vaccine will be released in greater quantities and more frequently as 1956 progresses.

Since the inception of this program in November, 1955, to March 31, 1956 the total of 348,975 cc. of vaccine have been distributed in South Carolina, of which 35,707 cc. were distributed through commercial channels. The remainder was distributed through the County Health Departments from vaccine purchased with public funds. During this period of time, 276,256 cc. have been administered and reported to the State Board of Health. This, together with the vaccine administered under the second grade inoculation program, makes a total of 499,051 cc. that have been given in South Carolina during the period April 12, 1955, to March 31, 1956.

No children who have received this vaccine have had any reactions that would not be expected to occur with any other injection.

Of the estimated population 5 to 9 years of age in South Carolina 64½% have received one dose of vaccine and 55% have received two doses. A relatively small per cent of the estimated population under 5 and 10 to 14 have been given vaccine as of this date,

(Continued on Page 194)

Exhibitors

THE AMERICAN BEDDING COMPANY

The American Bedding Company specializes in extra firm NATURAL POSTURE bedding that is constructed according to principles outlined by orthopedic authorities.

Their exhibit shows two of the three numbers in the NATURAL POSTURE series and features the Health-O-Pedic mattress and box spring—which has an extra firm center, but luxury smooth top.

Ask about their special professional price.

SANDOZ PHARMACEUTICALS

Sandoz Pharmaceuticals cordially invites you to visit our display at the South Carolina Medical Association—Booth #13.

CAFERGOT—Available in oral and rectal form for effective control of head pain in migraine and other vascular headaches.

FIORINAL—A new approach to therapy of tension headaches and other head pain due to sinusitis and myalgia.

BELLERGAL—Valuable as an automatic inhibitor in a variety of functional ills—the volume of favorable clinical reports is constantly increasing.

Any of our representatives in attendance will gladly answer questions about these and other Sandoz products.

BLUE CROSS . . . BLUE SHIELD

Before a Blue Cross or a Blue Shield plan can determine what program of benefits it can offer, hospital and medical services must be analyzed and classified in such a way that insurance principles can be applied. After all, Blue Cross and Blue Shield are insurance plans and their operations must be in accordance with principles of insurance.

There are three major medical areas: therapeutic, diagnostic, and preventive. The whole field of preventive medicine must be rejected by Blue Cross and Blue Shield because it is not insurable for two reasons. First, there is no certainty of utilization or occurrence of claims. There is no way to estimate an experience rating. Demand for preventive medical services is subject to the whim of the insured and not to necessity. Second, the fact that one is insured immeasurably increases the risk, when it comes to preventive medicine.

Therapeutic and diagnostic care has to be broken down in order to apply insurance principles to them. Medical and hospital care in connection with chronic illness has to be ruled out, because, again, there is no certainty of occurrence; no experience index can be determined; no cost formula can be fixed. Elective care has to be omitted from insurance coverage for the same reasons. There is left *necessary* therapeutic and diagnostic care. From these, procedures of minor financial consequence should be omitted from insurance coverage. To include them would be of little service to the member and would add definitely to the cost of coverage shared by all members. The costs of administration would be excessive. There is left then for coverage by a Blue Cross or Blue Shield contract *necessary* major medical and hospital care. In conjunction with these coverages, various devices which are designed to serve as safeguards are applied. These are deductions, co-insurance, waiting periods, and other contract limitations. Repetitive procedures such as injection treatments, endoscopic examinations, progress x-ray studies, electrocardiograms, etc., must have limitations placed upon them; otherwise they become uninsurable because their repetition is governed too largely by the whim or curiosity of the doctor or the patient.

It is too late to insure a house after it has caught fire. Similarly, it is not possible under sound insurance practice to insure a member against the costs of treatment of conditions already present at the time the membership certificate is issued. Just as it is not necessary that the house be burned to the ground before it becomes uninsurable, so it is not necessary that the individual be in need of immediate or early treatment of an existing condition to make him uninsurable in regard to that condition.

Blue Cross and Blue Shield assume an intermediate attitude toward coverage of individuals with already present conditions which already do or probably shall require treatment. Such individuals are not denied membership. If they are members of groups, a waiting period of from six to twelve months is required before treatment of the already present condition or its complications is covered. In very large groups all waiting periods may be waived. In non-group applicants, if some such condition is present, recognized, and admitted on the application, the applicant is not accepted. If it has not been recognized until after the effective date of the contract, the waiting period is enforced; however, it should be stressed that knowledge of such pre-existing condition is not necessary to make the condition subject to the waiting-period requirements.

There is then left a residual of medical and hospital care in connection with necessary diagnosis and treatment. Stress again should be laid on the word *necessary*. Blue Cross does not agree to furnish hospital care for minor illnesses or complaints or for diagnostic procedures which can be done equally as safely on an outpatient basis as on an inpatient basis. Neither does it agree to furnish unnecessary diagnostic procedures, and especially x-ray studies, whether these are done during a legitimately covered necessary period of hospitalization or not. Our contract seeks to limit such studies by excluding coverage of x-ray examinations not consistent with the diagnosis of the condition for which the patient is hospitalized.

The greatest difficulties our plans have had have stemmed from the fact that we do not insure until after the expiration of waiting periods against the costs of treatment of conditions which were already present when the patient joined the plans, and that we insure on a cash indemnity basis against the cost of hospital treatment which is primarily for diagnosis.

Frequently, embarrassment, resentment, and disappointment for all concerned would be avoided by postponing an elective operation for one or more months until the waiting period had expired. Once the operation is performed, it is difficult to admit and to explain to the patient that the condition had undoubtedly been present at the time he joined the plan, and therefore was not covered by the membership agreement until after the expiration of a waiting period.

It is perhaps even harder to tell a patient that suggested diagnostic studies will be covered only by a relatively small cash indemnity rather than on an a full payment basis because they are primarily diagnostic, and to suggest to him that he would probably save money by having the studies done on an outpatient basis.

Until doctors and hospitals are fully cooperative in these matters, the plans will continue to have difficulties, and they will be faced constantly with the prospect of having to increase membership dues.

J. Decherd Guess, M. D., Medical Director

MINUTES
of
THE ANNUAL MEETINGS
of the
DIRECTORS AND MEMBERSHIP
of the
SOUTH CAROLINA HOSPITAL
SERVICE PLAN

February 29, 1956

The Annual Meeting of the Board of Directors of the South Carolina Hospital Service Plan convened at 11:30 A. M. on February 29, 1956, in the Wade Hampton Hotel, Columbia, South Carolina. Mr. G. A. Buchanan, President, presided.

The following Directors of the Corporation were present: Mr. F. O. Bates, Mr. L. C. Fischer, Dr. J. R. S. Siau, III, Mr. A. Preston Nisbet, Mr. J. M. Daniel, Mr. C. A. Robb, Mr. Frank S. Adams, Dr. Robert Wilson, Jr., Mr. T. B. Stevenson, Mr. Raymond L. Willis, Mr. Henry J. Winn, Dr. W. T. Brockman, Dr. Thomas G. Dotterer, Mr. George A. Buchanan, Mr. M. L. Meadors.

The following Members of the Corporation were present: Mr. Richard G. Roach, Mr. J. K. Crowson, Mr. John Hash, Dr. W. A. Black and Mr. George L. Cunningham.

Staff Members attending were Mr. William Sandow, Jr., Mr. Russell W. Badger, Jr., Mr. A. C. Starin and Mrs. Lucile Fouché.

I.

Upon motion duly made and seconded, the Minutes of the Annual Meeting of February 23, 1955, and the Quarterly Meeting of November 23, 1955, were approved as circulated.

II.

Mr. William Sandow, Jr., Executive Director, discussed the January Operating Statement and Balance Sheet as well as the results of operations for the year 1955. In this latter regard a net gain of slightly over $214,000.00 was attained for 1955. This figure was contrasted to a loss of slightly over $257,000.00 for 1954.

III.

Dr. Robert Wilson, Jr., Chairman of the Nominating Committee, submitted the following slate of nominees to the Membership of the Corporation: Mr. G. G. Cromer, Anderson, S. C., Mr. J. M. Hamrick, Gaffney, S. C., Mr. Claude Weeks, Newberry, S. C., representing Hospitals; and Dr. W. A. Klauber, Greenwood, S. C., Dr. J. N. Gaston, Jr., Chester, S. C., Dr. George S. Rhame, Camden, S. C., Dr. M. M. Teague, Laurens, S. C., representing the Medical Profession; and Mr. R. C. McCall, Easley, S. C., Mr. P. W. McAlister, Jr., Laurens, S. C., Mr. R. W. Shand, Hartsville, S. C., representing the General Public.

Upon motion duly made and seconded, the nominations were closed and the Secretary was instructed to cast a unanimous ballot electing these nominees to the Membership of the Corporation, subject to their acceptance.

IV.

The Meeting then adjourned and immediately reconvened as the Annual Meeting of the Membership of the South Carolina Hospital Service Plan. The same persons were in attendance as listed above, and Mr. Buchanan announced that he held 31 proxies from absent Members.

V.

Upon motion duly made and seconded, the Minutes of the Annual Meeting of the Membership on February 23, 1955, were approved as circulated.

VI.

Mr. Sandow, Executive Director, reported briefly on events of the past six months and the current status of the Plan.

VII.

Upon a motion duly made and seconded, the following amendment to Article XI of the By-laws was approved, as follows:

". . . . The Board of Directors shall consist of not less than nine (9) nor more than thirty (30) in number (formerly twenty-four) (24), which must come from the following, with one-third (1/3) from each group (formerly 25%) . . . ."

VIII.

Dr. Robert Wilson, Jr., Chairman of the Nominating Committee, submitted the following slate of nominees to the Board of Directors to succeed themselves for a 3-year term: Dr. John Fleming and Dr. H. M. Allison, representing the Medical Profession; and Mr. T. B. Stevenson and Mr. J. M. Daniel, representing Hospitals; and Mr. R. L. Willis, Mr. J. B. Norman and Mr. F. O. Bates, representing the General Public; to be elected as New Directors for a 3-year term: Mr. R. E. Toomey, Greenville, S. C., representing Hospitals; and Dr. G. N. Quantz, Rock Hill, S. C., representing the Medical Profession; to be elected as New Directors for a 1-year term: Mr. R. G. Roach, Orangeburg, S. C., Mr. J. E. Case, Sumter, S. C., representing Hospitals; and Dr. W. A. Black, Beaufort, S. C., representing the Medical Profession; and Mr. W. H. Carr, Spartanburg, S. C., Mr. A. B. Rivers, Columbia, S. C., representing the General Public. Dr. Wilson also submitted the following slate of Alternate Nominees as New Directors: Mr. Mark Stanton, Florence, S. C., representing Hospitals, Dr. Francis P. Owings, Union, S. C., representing the Medical Profession, Mr. G. Sims McDowell, Charleston, S. C., representing the General Public.

Upon motion duly made and seconded, the nominations were closed, and the Nominees and Alternate Nominees, were declared elected unanimously, subject to their individual acceptance.

IX.

Dr. Wilson submitted the following slate of Nominees for Officers of the Board for 1956: President, Mr. G. A. Buchanan; Vice President, Mr. M. L. Meadors; Secretary, Mr. A. P. Nisbet; and Treasurer, Mr. J. B. Norman.

Upon motion duly made and seconded the nominations were close, and the new Officers were declared elected unanimously.

X.

Upon motion duly made and seconded, and approved, a vote of thanks to the Board of Directors and the Executive Staff for their services during 1955 was placed in the records.

There being no further business, the Meeting adjourned at 12:20 p. m.

MINUTES OF THE MEETING
OF THE RECONSTITUTED BOARD
OF DIRECTORS
OF THE SOUTH CAROLINA HOSPITAL
SERVICE PLAN

The Reconstituted Board of Directors of the South Carolina Hospital Service Plan met at 12:20 P. M. on February 29, 1956, in the Wade Hampton Hotel, Columbia, South Carolina. Those present were the same as listed above, with Mr. Roach and Dr. Black now present as Directors.

I.

Upon motion duly made and seconded, Mr. Buchanan was authorized to appoint a 7-man committee to study the problems of and make recommendations on a permanent site for the Plan.

There being no further business, the Meeting adjourned at 12:35 P. M.

Respectfully submitted,

A. Preston Nisbet
Secretary

NEWS

Dr. Robert M. Johnson has announced that Dr. M. Grayson Evans is now associated with him in the general practice of medicine at Riverland Terrace, Charleston.

Dr. Roy C. Campbell of Orangeburg has been notified that he has passed an examination given recently by the American Board of Surgery and is now a certified diplomate.

At the annual meeting of the Board of Directors of the South Carolina Division of the American Cancer Society in Columbia on April 4, Dr. Edgar Pund, president and pathologist of the Medical College of Georgia said men in his profession are optimistic concerning cancer because they see so many patients who have definitely been cured.

During the meeting Dr. Pund presented the annual award of the American Cancer Society to the South Carolinian who in 1955 made the greatest contribution to the fight of cancer. The award went to Dr. H. Rawling Pratt-Thomas, pathologist at the Medical College of South Carolina.

Dr. J. A. Fort of Columbia was hospitalized recently following an automobile collision.

The seventh annual Frank Hilton McLeod Memorial Scientific Assembly was held in Florence on March 15, 1956. Papers were presented by Drs. Earl R. Jones, Henry L. Rigdon, Walter R. Mead, and R. F. Zeigler, Jr. A pathological conference was held. The principal speaker at the meeting was Dr. Thomas H. Alphin, Director of the Washington Office, American Medical Association.

Dr. James Dorman Turner announces the opening of his office for the practice of medicine in Winnsboro.

Dr. Turner is a graduate of Furman University, and Emory University Medical School, class of 1940. Upon completion of Internship at Emory University Hospital, Atlanta, Ga., Dr. Turner served with the U. S. Army Medical Corps for 4½ years. For the past ten years he has practiced general medicine and surgery in Nashville, Ga.

The York County Medical Society met on March 16, 1956 for their regular meeting and elected the following officers for the coming year: Dr. John M. Pratt, York, S. C., president; Dr. Frank S. Faire, Rock Hill, S. C., vice-president; and Dr. G. F. Hiott, Jr., York, S. C., secretary-treasurer.

It was also decided that after this meeting the York County Medical Society would start meeting on the third Tuesday of every month except for the months of June, July and August.

Dr. Herbert Blake, Anderson, was elected president of the South Carolina Obstetrical and Gynecological Society. He replaces Dr. Jack B. Parker, Greenville.

Other new officers who will serve in 1957 are Dr. Lawrence L. Hester, Jr., Charleston, president-elect, and Dr. James E. Bell, Sumter, secretary-treasurer.

The group also elected 10 new members.

They are Dr. Larry N. Bellew, Greenville; Dr. Sam Fleming, Spartanburg; Dr. Harwood Beebe, Jr., Spartanburg; Dr. Mabel Frew, Rock Hill; Dr. Joseph Moore, Greenville; Dr. Stanton Collins, Conway; Dr. Niles Borop, Aiken; Dr. Seth Latham, Aiken; Dr. Robert Lumpkin, Georgetown; and Dr. E. J. Dennis, 3rd, of the staff of the Medical College of Charleston.

Dr. George H. Orvin of Charleston has been elected governor of the South Carolina district of Sertoma International.

Dr. Orvin, a charter member of the Charleston Sertoma Club, is a member of the Charleston County Board of Health, a member of the executive board of the South Carolina Industrial Medical Assn., vice president of the Medico-Chirugical Club and a member of the house of delegates of the South Carolina Medical Assn.

He is a 1943 graduate of The Citadel and a 1946 graduate of the Medical College of South Carolina. He also is a past president of the Citadel Brigadier Club.

Dr. Orvin is medical director for the Atlantic Coast and South Atlantic Life Insurance Companies, chairman of the Red Cross Blood Program in Charleston, and a member of the Governmental Affairs Committee of the Greater Charleston Chamber of Commerce.

Dr. Sydney Garrett, a native of Six Mile, is now associated with the Cannon Memorial Hospital in Pickens in the general practice of medicine.

Dr. Garrett is a graduate of Berea College, and of the Medical College in Charleston. He is a member of Phi Rho Sigma, medical fraternity. He served his interneship at Columbia Hospital, Richland County.

The Piedmont Proctologic Society, composed of members of the American Proctologic Society who practice in Virginia, North Carolina, South Carolina, Georgia, and Tennessee, has for its present officers Dr. G. Farrar Parker, Asheville, president; Dr. W. Clough Wallace, Greenville, vice president; and Dr. Fred B. Hodges, Atlanta, secretary-treasurer. The society meets twice a year.

Dr. Richard W. Hanckel, president of the Charleston County Medical Society, welcomed the group at its meeting in Charleston, March 17. Speakers during the morning session included Dr. Edgar Boling, assistant professor of Proctology, Emory University School of Medicine at Atlanta, and Dr. Robert V. Terrell, assistant professor of Clinical Proctology, Medical College of Virginia.

Dr. H. Grady Callison, Anderson, county health officer and former director of local health services for the State Board of Health, has been honored by being appointed to the Council on Public Health and Education, which is an important committee to the American College of Preventive Medicine.

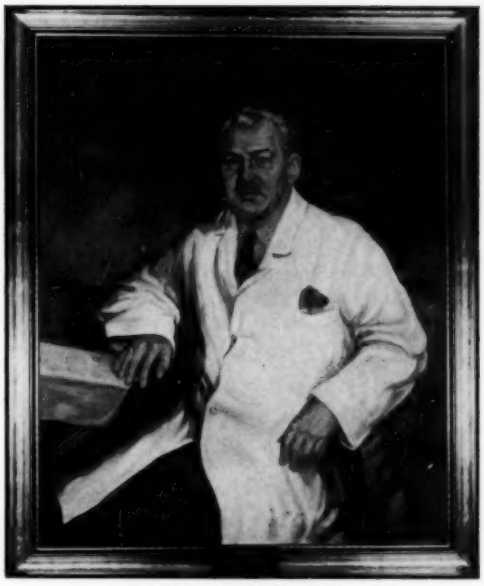
Dr. William F. Dukes of Branchville, S. C., has been elected vice president of the Fellows Assn. of the Alton Ochsner Medical Foundation, New Orleans.

The association is composed of graduate physicians having completed or presently engaged in the Foundation's Fellowship program of advanced training in the various medical and surgical specialties.

Received his M. D. degree from the Medical College of South Carolina and interned at the Orangeburg Regional Hospital. Following internship he began his specialty training in general surgery at the Ochsner Foundation in July, 1954.

CLINICAL DEMONSTRATION ON CEREBRAL PALSY

Dr. Perlstein, who will address the Association on Wednesday afternoon, will also give a special clinic at 11:00 a. m. on Wednesday, at which he will discuss actual cases of cerebral palsy and the management of the disease. All members are invited to attend. The place will be announced later.



Frederick E. Kredel, M. D.

SOUTH CAROLINA SURGICAL SOCIETY

The meeting at Charleston was opened on March 23 with a talk on Cytologic Diagnosis by Dr. H. R. Pratt-Thomas. This was followed by a talk on Experimental Aspects of Adrenal Function in Surgical Stress by Dr. Robert P. Walton and then by the subject, The Sludging of Blood in Trauma and Burns by Dr. Melvin H. Knisely.

At 5:00 p. m. a presentation of a portrait of Dr. Frederick Kredel by his former residents was made to the Medical College of South Carolina. Dr. Alvin G. Brown of Rock Hill made the presentation and Dr. Kenneth M. Lynch, President of the Medical College of South Carolina, accepted the portrait on behalf of the Medical School.

A business meeting was held immediately following this. Dr. James Allen of Florence and Dr. Edmund G. Taylor of Columbia were elected to membership.

At 7:15 p. m. Friday evening a dinner was held in the Francis Marion Hotel for the members of the Society and their wives.

On Saturday, March 24, a program consisting of operative clinics including the following addresses was given:

Recent Advances in the Field of Thyroid Disease
Dr. Henry Donato

Surgical Aspects of Potassium Metabolism
Dr. Louie B. Jenkins

Surgical Treatment of Aneurysms
Dr. J. Manly Stallworth

The meeting was concluded with a luncheon at the Fort Sumter Hotel.

(Continued on Page 194)

Program, Scientific Session
Annual Meeting
May 15th, 16th and 17th, 1956

WEDNESDAY, MAY 16, 1956

For the benefit of those doctors who will not be attending the meeting of the House of Delegates, the following scientific films will be shown at times specified in the small dining room:

9:15 A. M. "The Diagnosis of Uterine Malignancies"
9:35 A. M. "Use of the Artificial Kidney"
10:00 A. M. "Progressive Muscular Atrophies, Dystrophies, and Allied Conditions"
10:30 A. M. "Dermatoses of Industrial Workers"
11:05 A. M. "Nephrosis in Children"
11:40 A. M. "Psychoneuroses"
12:30 A. M. "Diagnosis of Cancer of the Stomach by Cytologic Methods"

SCIENTIFIC SESSION
O. B. Mayer, M. D., President, presiding

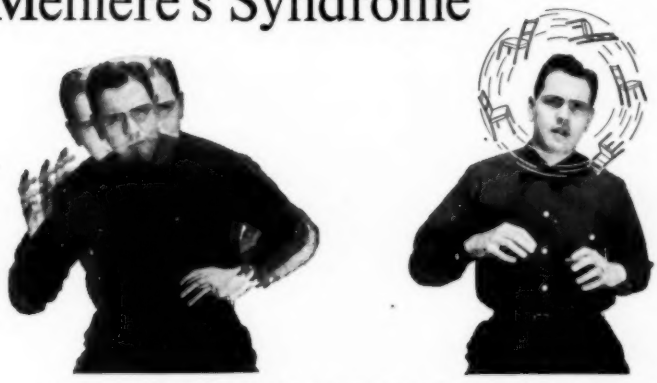
3:00 P. M. "The Medical Aspects of Cerebral Palsy"
Meyer A. Perlstein, M. D., Chicago, Illinois
3:30 P. M. "Treatment of Aneurysm and Occlusive Diseases of the Aorta"
Denton A. Cooley, M. D., Houston, Texas.
4:00 P. M. Recess to visit exhibits.
4:30 P. M. Panel: "The Uses and Abuses of ACTH and Cortisone"
Moderator: David F. James, M. D., Atlanta, Georgia
Allergist: Kelly T. McKee, M. D., Charleston, S. C.
Anesthesiologist: William S. Howland, M. D., New York, New York
Pediatrician: Louis K. Diamond, M. D., Boston, Massachusetts

THURSDAY, MAY 17, 1956

9:00 A. M. Memorial Service
9:15 A. M. The President's Address—O. B. Mayer, M. D., Columbia, S. C.
9:45 A. M. "The Clinical Importance of Human Blood Groups"
Louis K. Diamond, M. D., Boston, Massachusetts
10:15 A. M. "The Induction of Labor"
C. Hampton Mauzy, M. D., Winston-Salem, North Carolina
10:45 A. M. Recess to visit exhibits
11:15 A. M. Panel: "The Newer Aspects of Blood Dyscrasias"
Moderator: Charlton DeSaussure, M. D., Charleston, S. C.
Hematologist: Claude Starr Wright, M. D., Augusta, Georgia
Surgeon: C. Stuart Welch, M. D., Albany, New York
Gynecologist: C. Hampton Mauzy, M. D., Winston-Salem, N. C.
Pediatrician: Louis K .Diamond, M. D., Boston, Massachusetts
12:45 P. M. Luncheon Recess.
2:15 P. M. Panel: "Peripheral Vascular Disease"
Moderator: Hiram L. Brockman, M. D., Spartanburg, S. C.
Internist: William T. Foley, M. D., New York, New York
Surgeon: Denton A. Cooley, M. D., Houston, Texas
Radiologist: Harold S. Pettit, M. D., Charleston, S. C.
3:30 P. M. Recess to visit exhibits.
4:00 P. M. Clinico-Pathologic-Therapeutic Conference (see protocol)
Moderator: F. E. Kredel, M. D., Charleston, S. C.
Surgeon: C. Stuart Welch, M. D., Albany, New York
Internist: William T. Foley, M. D., New York, New York
Radiologist: Harold S. Pettit, M. D., Charleston, S. C.
Pathologist: H. Rawlings Pratt-Thomas, M. D., Charleston, S. C.

Notes on the Diagnosis and Management of "Dizziness"

III. Ménière's Syndrome



1. Paroxysmal Whirling Vertigo. *This consists of sudden attacks of dizziness, often when the patient is at rest or asleep. The patient may feel that he himself is whirling or that fixed objects about him are whirling. The attack usually lasts for a few minutes; occasionally it is severe for weeks or subacute for months.*

2. Subtotal Hearing Loss. *Deafness will usually affect the high tones and it may be unilateral or bilateral. Sometimes the hearing loss is severe and also progressive.*

3. Tinnitus. *This is usually unilateral and present in the ear with greater hearing loss and is without a definite pattern.*

Fewer diagnostic errors[1] will result if a "triad of symptoms" is required of patients with suspected Ménière's syndrome. These are the symptoms of typical Ménière's syndrome:

1. Severe paroxysmal vertigo which may be of two types; either the patient feels that he is whirling or that objects about him are whirling.
2. Fluctuating subtotal hearing loss, usually affecting the higher tones, is noted at the same time as vertigo.
3. Tinnitus, usually unilateral, is associated with the deafness and dizziness.

With Ménière's syndrome there is no definite localization[2] by the Bárány (vestibular reaction) test and results of the caloric test are not diagnostic. Physical examination should rule out disease of the central nervous or cardiovascular systems before a diagnosis is made.

"Treatment with Dramamine®. . . is effective[3] in aborting and preventing attacks of Ménière's syndrome . . . will prevent or arrest attacks of vertigo. It will also reduce the intensity of the tinnitus and so may save some of the hearing in the affected ear."

Dramamine is recommended for Ménière's syndrome as the sole therapy or in combination with other treatment programs.

It is a therapeutic standard also for motion sickness and is useful for relief of nausea and vomiting of radiation sickness and fenestration procedures.

Dramamine (brand of dimenhydrinate) is supplied in tablets (50 mg.); Supposicones® (100 mg.); ampuls (250 mg.); liquid (12.5 mg. in each 4 cc.). G. D. Searle & Co., Research in the Service of Medicine.

1. DeWeese, D. D.: Symposium: Medical Management of Dizziness. The Importance of Accurate Diagnosis, Tr. Am. Acad. Ophth. *58*:694 (Sept.-Oct.) 1954.
2. Jackson, C., and Jackson, C. L. (editors): Diseases of the Nose, Throat, and Ear, Philadelphia, W. B. Saunders Company, 1945, pp. 368; 414.
3. Queries and Minor Notes: Ménière's Syndrome, J.A.M.A., *141*:500 (Oct. 15) 1949.

A new edition of "Dramamine Reviews and Abstracts," containing digests of more than 100 recent articles, is available on request to . . .

SEARLE

P. O. Box 5110, B
Chicago 80, Illinois

COMMITTEE REPORT

(Continued from Page 187)

March 31, 1956, but these age groups are receiving the vaccine at the rate of about 30,000 each month. Slightly more than 3,000 prenatals have been given vaccine in this program.

In recent years, about 65.5% of the polio cases occurred in children under 10 years of age and another 16% in the age group 10 to 14 years.

There has been the finest cooperation between the Health Departments and physicians in the administration of this program. About one-third of the inoculations are being given by the children's family physicians.

As this is the year set up by statute for the election of all members of the Executive Committee of the State Board of Health, the chairman and each individual member wishes to express our appreciation of the privilege of serving in our various categories. We especially wish to thank the medical profession for its understanding cooperation and the splendid support given the Board in the past few years.

Respectfully submitted:

Executive Committee, State Board of Health
W. R. Wallace, M. D., Chairman

SOUTH CAROLINA SURGICAL SOCIETY

(Continued from Page 191)

Dr. Edward G. Parker of Charleston was elected President of the South Carolina Surgical Society for 1957. Dr. Claude Perry of Anderson was elected Vice-President. Dr. J. Robert Thomason of Greenville was elected Secretary-Treasurer.

DELEGATES TO AMA

Dr. George D. Johnson

Dr. William Weston, Jr.